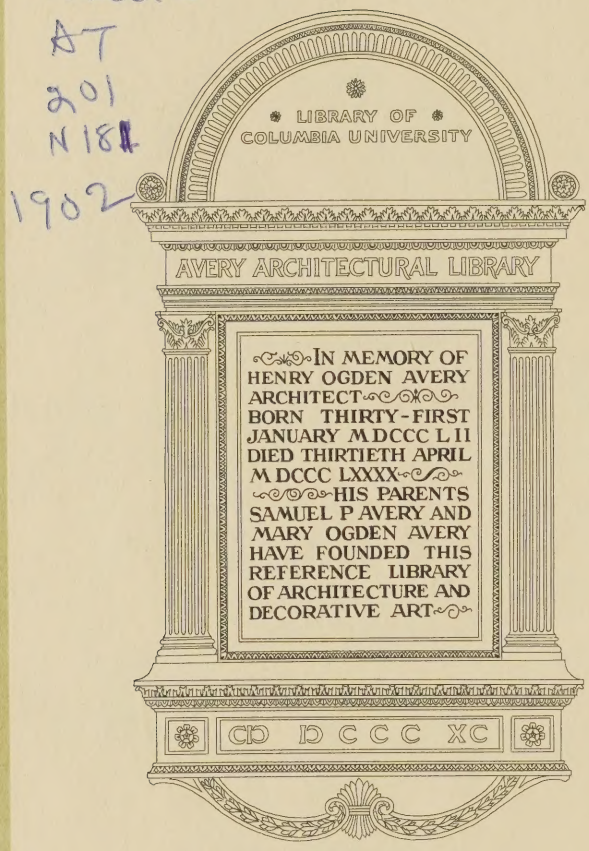
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Mason Manufacturing Company

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NASON MANUFACTURING CO.,

71 Fulton Street through to 71 Beekman Street, New York.

Cable address: Unitorgan, New York.
A. B. C. and Western Union Codes.

ILLUSTRATED LISTS OF PRICES

—FOR—

WROUGHT AND CAST IRON PIPE,

BRASS AND IRON VALVES AND FITTINGS,

Plumbing Supplies, Fixtures and Specialties of Every Description.

GENERAL SUPPLIES FOR STEAM, GAS, WATER, AMMONIA AND OIL.

STEAM, GAS FITTERS' AND PLUMBERS' TOOLS AND SUPPLIES.

Boilers, Engines, Compressors, Radiators, Blowers and Engineering Specialties.

September, 1902.



Copyright, 1902, by
NASON MANUFACTURING CO.,
NEW YORK.

A review of our business outlook on the Sixtieth Anniversary of our foundation convinced us that the scope of all earlier publications was entirely inadequate to properly cover the enlarged field of modern specialties, general goods, and fixtures sold by us, and it was therefore deemed imperative to issue a catalogue which would more fully embrace the complete lines of goods now to be found in our several departments.

In its compilation studious care has been exercised in the selection of all goods listed and illustrated with the intent of showing only such as we have from thorough knowledge of their merits found to be worthy of entire endorsement.

Cuts have been reduced wherever possible in order to curtail the size of the book to the smallest possible dimensions, and consecutive association of the various goods has had unusually careful consideration. It will be noticed that a distinct font of type has been used throughout to indicate prices, thus avoiding all confusion with figures for dimensions without resorting to the dollar mark.

Attention is directed to our General Supply and Valve section and the broad manner in which we believe this group has been covered.

An attractive assortment of Gas and Combination Chandeliers and Fixtures is also shown, and attention is invited to this unique display.

Our Ammonia and Hydraulic sections will be found of especial interest to purchasers of these goods.

The department relating to controlling devices will be found comprehensive, as will also the very extensive group of steam engineering specialties, pumps, and tools which are shown.

Several years since, in broadening our business channels, we deemed it advisable to enter fully into the Plumbing Goods Department, which class will now be found to be most complete both in text and illustration. Inspection of the extensive display of fixtures and appurtenances which are shown in the Plumbing section of the book will be appreciated, and those desiring to make personal selection are invited to review the very complete collection of modern fixtures displayed in our show room.

Our invariable aim is to make shipment of general orders the same day received, which a complete stock and a thoroughly well organized shipping department enables us to do, while a recent extensive addition to our premises has largely increased our stock capacity, and will, if possible, enable us to fill orders even more promptly than in the past.

Cordial thanks are extended to friends and patrons of the past, and the good will of those whose acquaintance we may make in the future is earnestly hoped for by

Faithfully yours

NASON MANUFACTURING COMPANY

IMITATION—SUBSTITUTION

While imitation has been characterized in a way as "the sincerest form of flattery," it clearly ceases to become so when specialties of known and standard merit are falsified with substitutes which are made and sold as being equal to the originals.

We are, therefore, again under the necessity of warning the trade and steam users in general that several of the specialties originated and manufactured by this Company, when ordered by our friends with the full expectation of receiving those of our make, are being substituted by unscrupulous dealers with goods which, while superficially resembling ours, are light in weight, rough in finish and entirely unfit for the high steam pressures in use in modern practice.

This is notably true of Steam Traps. See that the name "Nason" appears cast upon their covers, and reject all others, for the latter, being of insufficient weight, and strength of flange bolts, are often dangerous when in use with modern steam pressures.

The trade mark "Nason" is the rightful property of the Nason Manufacturing Co., and if Steam Traps other than those of our make are sold as "Nason" traps, the sellers render themselves liable to action for selling goods under false representation.

NASON MANUFACTURING COMPANY

71 Fulton Street through to 71 Beekman Street

New York City

September, 1902

SPECIAL NOTICE

Terms: Monthly settlements, unless otherwise agreed.

Discount sheets will be issued promptly where possible upon change of market prices, but all catalogue lists and published discounts are subject to change without notice.

All quotations are for immediate acceptance.

Claims for corrections or deductions must be made within ten days after receipt of goods.

Any goods proving defective when used for the purpose manufactured will be replaced, but no claims for labor or damages will be allowed.

Contracts are subject to delays from strikes, accidents, or causes beyond our control.

Definite instructions as to route, packing, insurance, etc., should accompany each order.

Specifications for goods not standard should be explicit and complete, and, when possible, accompanied by sketch.

Orders cannot be countermanded without our consent; this is especially true of goods other than standard.

Boxing charged at cost; cartage at lowest rates; goods not insured unless so ordered.

Goods must not be returned except by special permission, and when so returned will be subject to discount and less freight and drayage.

Our responsibility ceases as soon as goods are delivered in good order and condition at railroad station or wharf in this city, and a receipt taken for them. If the carriers insist on our signing a release or other document having reference to their liability, before they receive the goods, we of course must comply; but this action in no way affects the right of the party to whom they are consigned (who is the real owner) to recover damages for any carelessness or negligence on the part of the carrier; and it should be distinctly understood that we, as senders, have no legal claim after the goods are delivered to the carriers properly consigned, as the ownership has passed from us to the consignee.

By the use of our Cypher Code orders may be placed by Wire at small cost and the saving of valuable time.

This catalogue supersedes all of earlier date.

Business correspondence, to secure prompt attention, should be addressed, not to its officers or employees, but to the—

NASON MANUFACTURING COMPANY

Established by Joseph Nason in 1842 **Incorporated in 1884**

CARLETON W. NASON, President
GEORGE L. TODD, Vice-President **FRANK A. BUCKNAM, Treasurer**
ARTHUR DE L. NEAL, Secretary

Telegraphic Code.

Shipping Instructions.

Mabel.....Ship via Rail.
Mattie.....Ship via Steamer.
Julia .....Ship via Express.
Abase.....Ship what you have in stock and balance as soon as possible.
Abash.....Send tracer after shipment of ——
Abate.....When will you ship? Wanted badly. Answer by wire.
Abating.....Ship immediately.

Inquiries.

Abbess.....At what price can you furnish —— ?
Abdomen....How soon and at what price can you furnish ?
Abduct.....Have you in stock and can you furnish ?
Abhor.....How long will it take you to make ?
Abhorrence..Can you buy for us from stock ?
Ability.....How many —— have you in stock ?
Abjure.....When will you ship our order ?
Able .....When can you ship ?
Ablest.....Have you shipped us any ?
Ablution.....Have you shipped order —— inst.?
Abnormal...When will you complete our order ?
Abode .. ....Can you furnish us promptly ?
Abound.....If not already shipped, cancel.
Abram .....What rate of freight can you obtain to ?
Abreast.....Shipping instructions by mail.
Abridge.....If you have not shipped order —— hold for instructions.

Replies.

Abrogate.....Particulars go by mail.
Abrupt.....We are waiting for the —— shall we ship balance without them ?
Abscond.....We can furnish at ——
Absconded... —— advanced to ——
Absconding..Shall we enter order ?
Absent..... —— decline to ——
Absolute.....We have no order.
Absolve.....None of the goods you ordered are in stock.
Absorbed.....Impossible for us to fill your order in time specified.
Absorbing....We have in stock and can furnish at ——
Abstain.....Referring to your order of the ——
Abstinence...We expect to ship on the ——
Abstinent....Telegram canceling order was too late; order has been shipped.
Abstruse.....We have in stock and can ship at once.
Absurdity....We can ship part from stock and balance in ——
Absurdness...Your message unintelligible; please repeat.
Abundance...We have none in stock.
Abundant....Referring to your letter of ——
Abusing.....Must have answer by
Abusive.....You have not answered our letter of ——
Abutment....We have already shipped.
Abutting ... .We can ship to day.
Academy.....We can ship on ——
Accented.....We can ship on receipt of order.
Accenting....Deliveries and freight rates.
Accident.....F. O. B. our Warehouse.
Accidental...F. O. B. Cars ——
Acclimate....F. O. B. Cars at your city.
Accomplish..F. O. B. Cars at mill.
Accounted...F. O. B. Cars at mill with freight allowance per 100 lbs. of ——
Accuse.....F. O. B. Cars at mill with freight allowed to make delivery at your city.
Accusing.....The rate of freight per 100 lbs., car lots, from mill to your city is ——
Accustom....The rate of freight per 100 pounds, less than car lots, from mill to your city, is ——
Ache.....The rate of freight per 100 pounds, car lots, from New York to your city, is ——
Achieve.....The rate of freight per 100 pounds, less than car lots, from New York to your city, is ——

To be Used in Quoting Discounts Only.

Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Aching..... 1	Actor.....12	Adjective...22½	Admitting .33⅓	Advertise..44	Affinity....55	Affronted..66	Agitation..76
Acorn..... 2	Actress....13½	Adjourn.....23	Admix.....34	Advisable..45	Affirmable..56	Afinity.....66⅔	Agony.....77
Acquaint... 2½	Actual.....13	Adjourned..24	Admonish..35	Advise.... 46	Afflict.....57	Afraid.....67	Agreeable..77½
Acquainted. 3	Actually....14	Adjudge.....25	Adopted....36	Advising...47	Afflicted...57½	Agape.....67½	Agreed.....78
Acquire.... 4	Adaline....15	Adjust.....26	Adopting ..37	Advocate ..47½	Afflicting..58	Agate.....68	Aground...79
Acquiring.. 5	Adamant...16	Adjusted....27	Adoption ..37½	Affable.....48	Affliction ..59	Aged.....69	Ahead.....80
Acquit..... 6	Addable...17	Adjusting...27½	Adorable...38	Affect.....49	Affluence...60	Agedly.....70	Ail.....82½
Acquittal... 7	Addition...17½	Adjustment.28	Adoration..39	Affected ..50	Affluent....61	Agency ... 71	Ailment....85
Acquitting. 7½	Addle.....18	Adjutant....29	Adore.....40	Affecting..51	Afforded ...62	Aggravate..72	Aiming....87½
Acrobat.... 8	Address....19	Admirable..30	Adorned....41	Affection...52	Affording..62½	Aggregate..72½	Aimless....90
Acting..... 9	Adequate ..20	Admiral.....31	Adorning ..42	Affiant.....52½	Affright....63	Aghast.....73	
Action.....10	Adhesion...21	Admission. 32	Advantage .42½	Affidavit...53	Affrighted .64	Agitate. .. 74	
Actionable.11	Adjacent...22	Admitted ...33	Adventure .43	Affiliate....54	Affront 65	Agitating..75	

Per Cent.	Per Cent.	Per Cent.
Ajax.....and 1	Algebra.....and 7½	Allotment.....and 10 and 7½ and 2½
Alabaster.....and 1½	Alienate.....and 7½ and 2½	Allotted.....and 10 and 7½ and 5
Alamo.....and 2	Alight.....and 7½ and 5	Allotting.....and 10 and 10
Albino.....and 2½	Alighting.....and 7½ and 7½	Allowance .....and 10 and 10 and 2½
Album.....and 2½ and 1	Alkali.....and 8	Allspice.....and 10 and 10 and 5
Albumen.....and 3	Alkaline.....and 9	Allude .....and 10 and 10 and 7½
Alchemist.....and 4	Allay.....and 10	Alluding.....and 10 and 10 and 10
Alcove.....and 5	Allege ... .and 10 and 2½	Allusion.....and 12½
Alder.....and 5 and 2½	Allegiance.....and 10 and 5	Almanac.....and 15
Alderman.....and 5 and 5	Alliance.....and 10 and 5 and 2½	Almighty.....and 17½
Alert.....and 6	Allot.....and 10 and 5 and 5	Almond.....and 20
Alertness.....and 7		

To be used with above words when the discount is the fractional part of 1% (one per cent.), thus 65.15% would be Affront, Aloud.

Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Alms.....05	Alpaca 20	Alum 35	Amassed.....50	Amateur.....60	Ambush.....70	Amidst.....80	Amity.....90
Aloof.....10	Altar.....25	Alumni 40	Amassing....55	Ambition....65	Amend.....75	Amiss.....85	Amnesty.....95
Aloud.... ...15	Alternate.....30	Amalgam 45					

Telegraphic Code.

Table Used in Ordering Pipe.

Number of Feet.	Black.	Size.	Galvanized.	Size.
25	Africa	Allegheny	⅛	Amazon	¼
50	Alabama	Baltimore	¼	Bay	⅜
75	Cuba	Camden	⅜	Colorado	½
100	Asia	Detroit	½	Danube	¾
200	Belgium	Erie	¾	Elbe	1
300	Chili	Fairmount	1	Firth	1¼
400	Denmark	Galena	1¼	Ganges	1½
500	Egypt	Harrisburgh	1½	Hudson	2
600	France	Ithaca	2	Indus	2½
700	Germany	Jamestown	2¼	Juniata	3
800	Holland	Kensington	3	Kanawah	3½
900	Ireland	Lancaster	3½	Lake	4
1000	Japan	Macon	4	Miami	4½
1500	Jersey	Quincy	4½	Nile	5
2000	Kentucky	Newark	5	Osage	6
2500	Kansas	Oneida	6	Po	7
3000	Liberia	Paris	7	Rhine	8
3500	Lapland	Reading	8	Seine	9
4000	Maine	Salem	9	Tweed	10
4500	Mexico	Troy	10	Ural	12
5000	Nevada	Utica	11		
6000	Ohio	Venice	12		
7000	Peru	Verona	14		
8000	Russia	Wales	16		
9000	Spain				
10000	Texas				

Wire Gauge Numbers.

Avenge	00000	Ballast	17
Avenging	0000	Ballasted	18
Avenue	000	Balmoral	19
Avoid	00	Bamboo	20
Avoiding	0	Banish	21
Avowal	1	Bankrupt	22
Awaking	2	Bantam	23
Awarded	3	Baptismal	24
Awful	4	Barefoot	25
Awkward	5	Bargain	26
Awning	6	Baritone	27
Axis	7	Barometer	28
Babel	8	Baroness	29
Baboon	9	Baronet	30
Backward	10	Baseless	31
Badge	11	Basely	32
Baffling	12	Basement	33
Baggage	13	Bashful	34
Bailiff	14	Basil	35
Balcony	15	Bassoon	36
Baleful	16		

Sizes.

Bastile	1/64	Behaving	9/32	Beverage	19	Blissful	51	Brahmin	83	Buggy	115	Caleb	147	Carmine	179
Bathe	1/32	Behead	1/16	Bewail	20	Blister	52	Brandy	84	Bulb	116	Calendar	148	Carnal	180
Bathing	1/16	Beheaded	5/64	Bewailing	21	Blithe	53	Breach	85	Bulwer	117	Calico	149	Carnival	181
Baton	5/64	Behold	3/32	Bewilder	22	Block	54	Bread	86	Bungle	118	Caliph	150	Carousal	182
Battalion	3/32	Behoof	7/64	Bible	23	Blockhead	55	Breadstuff	87	Bungling	119	Calmly	151	Carpenter	183
Battery	7/64	Belate	1/8	Biblical	24	Bloomer	56	Breaker	88	Burdock	120	Calmness	152	Cartridge	184
Bawble	1/8	Belfry	9/64	Bigness	25	Bludgeon	57	Breakfast	89	Bureau	121	Calomel	153	Casemate	185
Bayonet	9/64	Belief	5/32	Bigoted	26	Bluff	58	Breastpin	90	Burglar	122	Calumet	154	Cashmere	186
Bazaar	5/32	Bellowing	11/64	Bigotry	27	Bluffing	59	Breathe	91	Burial	123	Cambric	155	Castigate	187
Beadle	11/64	Belong	3/16	Bilge	28	Blunder	60	Breeding	92	Burning	124	Camped	156	Castor	188
Bear	3/16	Beloved	7/64	Binnacle	29	Bluntley	61	Brethren	93	Bursting	125	Camphor	157	Casual	189
Beaten	13/64	Beloving	5/32	Bison	30	Boasted	62	Brevet	94	Busily	126	Camping	158	Catacomb	190
Beauty	7/32	Beneath	15/64	Bitter	31	Boastful	63	Brewer	95	Buskin	127	Candid	159	Catching	191
Becalm	15/64	Benedict	9/32	Bitterly	32	Bodily	64	Brewing	96	Bustle	128	Candidly	160	Catchup	192
Bedaub	1/4	Benefit	1	Bitumen	33	Bolivar	65	Bribery	97	Button	129	Candling	161	Cathartic	193
Bedeck	17/64	Bengal	2	Blacking	34	Bombard	66	Bribing	98	Buttress	130	Canine	162	Catnip	194
Bedecking	9/32	Benumb	3	Blackleg	35	Bombay	67	Bride	99	Buzzard	131	Cannibal	163	Caucus	195
Bedlamite	19/64	Benumbed	4	Blame	36	Bondage	68	Bridewell	100	Bylaw	132	Capsize	164	Caution	196
Bedrid	5/16	Bequest	5	Blameable	37	Bonny	69	Bridling	101	Byway	133	Capstan	165	Cavalry	197
Bedside	21/64	Besetting	6	Blameless	38	Bonus	70	Brilliant	102	Byword	134	Capsule	166	Cavern	198
Bedstead	11/32	Beslege	7	Blanche	39	Booby	71	Brimful	103	Cabbage	135	Captain	167	Cavity	199
Beech	23/64	Besmear	8	Blanket	40	Booming	72	Brittle	104	Cabin	136	Captivate	168	Cayenne	200
Befall	3/8	Bespatter	9	Blarney	41	Border	73	Broad	105	Cabinet	137	Captivity	169	Cedar	250
Befalling	25/64	Bestir	10	Blasted	42	Bosom	74	Brother	106	Caboose	138	Caravan	170	Celebrate	300
Before	13/32	Bestowed	11	Bleed	43	Botanist	75	Brotherly	107	Cackling	139	Carbon	171	Celestial	350
Befriend	27/64	Betake	12	Bleeding	44	Botany	76	Browbeat	108	Cadence	140	Carbonate	172	Cement	400
Beget	7/16	Bethink	13	Blemish	45	Bothered	77	Brownish	109	Cadet	141	Carboy	173	Censure	450
Begging	29/64	Betimes	14	Blighted	46	Bouncing	78	Bruise	110	Cajole	142	Carcass	174	Centipede	500
Beginner	15/32	Betrayal	15	Blind	47	Bounty	79	Brutal	111	Calabash	143	Cardinal	175	Century	1000
Begotten	31/64	Betraying	16	Blinded	48	Bracelet	80	Bucket	112	Calamity	144	Carding	176	Cinnamon	2000
Begrudge	1/2	Betrothal	17	Blinding	49	Brackish	81	Buff	113	Calculate	145	Careless	177	Citadel	3000
Beguile	17/32	Between	18	Blindfold	50	Braggart	82	Buffet	114	Caldron	146	Caress	178	Civilian	4000

Fractions When Used in Connection With Whole Numbers.

Age	1/16	Ed	3/16	Ful	5/16	Ish	7/16	Like	9/16	Ness	11/16	Nate	13/16	Wise	15/16
Able	1/8	Er	1/4	Ing	3/8	Less	1/2	Ly	5/8	Nal	3/4	Ship	7/8		

Add to word for whole number the syllable representing fraction.
Example—135½ would be Cabbageless; 27 5/16 would be Bigotryful.

Specified Quantities.

Amongst	⅛	Animal	12	Apartment	27	Appraise	42	Armature	57	Ashamed	72	Astonish	87	Attract	150
Amorous	¼	Animated	13	Aperture	28	Approach	43	Armor	58	Ashore	73	Astray	88	Attracted	175
Ample	½	Animation	14	Apex	29	Approve	44	Armpit	59	Asleep	74	Astride	89	Attribute	200
Amplify	¾	Ankle	15	Apollo	30	Aptness	45	Army	60	Aspect	75	Asunder	90	Auction	250
Amulet	1	Annex	16	Apology	31	Arab	46	Arrange	61	Assail	76	Asylum	91	Audible	300
Amuse	2	Announce	17	Apostle	32	Arabia	47	Arrest	62	Assailed	77	Athlete	92	Audience	350
Anatomy	3	Antelope	18	Apparel	33	Arbitrate	48	Arrested	63	Assault	78	Athletic	93	Auditing	400
Ancestor	4	Anthem	19	Appeal	34	Arcade	49	Arresting	64	Assaulted	79	Attain	94	Auditor	450
Anew	5	Antidote	20	Appealed	35	Archduke	50	Arrogant	65	Assay	80	Attaining	95	Aunt	500
Angel	6	Antiquated	21	Appealing	36	Archives	51	Arsenal	66	Assemble	81	Attempt	96	Autumn	750
Angelic	7	Antique	22	Appendix	37	Ardent	52	Arsenic	67	Assets	82	Attentive	97	Avalanche	1000
Angling	8	Antiquity	23	Applaud	38	Ardently	53	Artery	68	Assign	83	Attest	98	Avalon	1500
Angry	9	Anxious	24	Applicant	39	Argument	54	Article	69	Assume	84	Attire	99	Avaunt	2000
Anguish	10	Apace	25	Apply	40	Arise	55	Artisan	70	Assuming	85	Attitude	100	Avenge	2500
Angular	11	Apart	26	Appoint	41	Arising	56	Artistic	71	Asthma	86	Attorney	125	Average	3000

Steam Section

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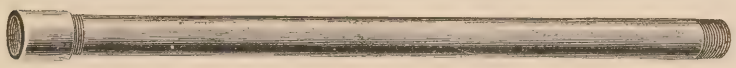
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Standard Steam, Gas and Water Pipe.



Internal Diameter Nominal.	List Prices Per Foot for Plain and Galvanized.	Thickness. Inches.	Actual Outside Diameter.	Nominal Weight, lbs. Per Foot.	No. Threads Per Inch of Screw.
1/8	.05½	.068	.405	.24	27
1/4	.05½	.088	.540	.42	18
3/8	.05½	.091	.676	.56	18
1/2	.08½	.109	.840	.84	14
3/4	.11½	.113	1.05	1.12	14
1	.16½	.134	1.315	1.67	11½
1¼	.22½	.140	1.66	2.24	11½
1½	.27	.145	1.90	2.68	11½
2	.36	.154	2.375	3.61	11½
2½	.57½	.204	2.875	5.74	8
3	.75½	.217	3.500	7.54	8
3½	.95	.226	4.000	9.00	8
4	1.08	.237	4.500	10.66	8
4½	1.30	.246	5.000	12.49	8
5	1.45	.259	5.563	14.50	8
6	1.88	.280	6.625	18.76	8
7	2.35	.301	7.625	23.27	8
8	2.82	.322	8.625	28.18	8
9	3.40	.344	9.688	33.70	8
10	4.25	.366	10.75	40.00	8
11	4.75	.375	12.00	45.00	8
12	5.20	.375	12.75	49.00	8

Large O. D. Pipe—Plain Ends.

Size, O. D.	¼-inch Thick.	5/16-inch Thick.	⅜-inch Thick.	7/16-inch Thick.	½-inch Thick.
14	3.85	4.80	5.75	6.65	7.60
15	4.15	5.15	6.15	7.15	8.15
16	4.40	5.50	6.60	7.65	8.70
17	4.70	5.85	7.00	8.15	9.25
18	4.95	6.20	7.40	8.60	9.80
20	5.50	6.90	8.25	9.60	10.95
21	----	7.25	8.65	10.10	11.50
22	----	7.60	9.10	10.60	12.10
24	----	----	9.95	11.60	13.15
26	----	----	11.30	13.15	14.95
28	----	----	12.15	14.15	16.15
30	----	----	----	15.20	17.65

Please Note That:

All quotations on Pipe, unless otherwise specified, apply to Plain Standard Steam, Gas and Water Pipe, as above listed in sizes ⅛ to 12 inches, in random lengths, threaded, with one Coupling on each length, and orders are accepted and executed with this understanding.

Pipe cut to special measurements, or to sketch, will be charged at 5 per cent. gross discount higher than random lengths, to cover waste, with additional charge to cover Labor as per our Table of Pipe Cutting.

Pipe cut to special lengths will not be threaded unless orders so specify. Couplings are not furnished with cut Pipe except at an extra charge and when so ordered. Where Pipe sketches are ordered made up, or tested, an additional charge for labor will be made.

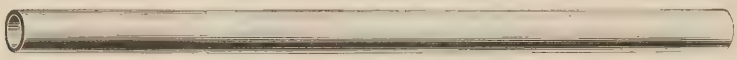
All Pipe and Tubing is subjected to a mill inspection, but inasmuch as it is not always possible to detect imperfections, the limit of the seller's guarantee is to replace any such goods that may be found defective.

Under no circumstance is the seller responsible for any damage beyond the invoice price of the goods.

Dimensions and Areas of Standard Steam, Gas and Water Pipe.

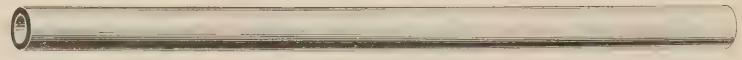
Inside Diameter. Nominal.	External Circumference. Inches.	Length of Pipe, per Square Foot of Outside Surface. Feet.	Actual Internal Area. Inches.	External Area. Inches.	Length of Pipe containing one Cubic Foot. Feet.
1/8	1.272	9.44	.0572	.129	2500.
1/4	1.696	7.075	.1041	.229	1385.
3/8	2.121	5.657	.1916	.358	751.5
1/2	2.652	4.502	.3048	.554	472.4
3/4	3.299	3.637	.5333	.866	270.
1	4.134	2.903	.8627	1.357	166.9
1 1/4	5.215	2.301	1.496	2.164	96.25
1 1/2	5.969	2.01	2.038	2.835	70.65
2	7.461	1.611	3.355	4.430	42.36
2 1/2	9.032	1.328	4.783	6.491	30.11
3	10.996	1.091	7.388	9.621	19.49
3 1/2	12.566	.955	9.837	12.566	14.56
4	14.137	.849	12.730	15.904	11.31
4 1/2	15.708	.765	15.939	19.635	9.03
5	17.475	.629	19.990	24.299	7.20
6	20.813	.577	28.889	34.471	4.98
7	23.954	.505	38.737	45.663	3.72
8	27.096	.444	50.039	58.426	2.88
9	30.433	.394	63.633	73.715	2.26
10	33.772	.355	78.838	90.762	1.80
11	37.699	.318	99.402	113.098	1.46
12	40.055	.299	113.098	127.677	1.27

Extra Strong Pipe—Plain Ends.



Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8
Actual O. D.	0.405	0.54	0.675	0.84	1.05	1.315	1.66	1.90	2.375	2.875	3.50	4.00	4.50	5.00	5.563	6.625	7.625	8.625
Nominal I. D.	0.205	0.294	0.421	0.542	0.736	0.951	1.272	1.494	1.933	2.315	2.892	3.358	3.818	4.280	4.813	5.750	6.625	7.625
Thickness	0.100	0.123	0.127	0.149	0.157	0.182	0.194	0.203	0.221	0.280	0.304	0.321	0.341	0.360	0.375	0.437	0.500	0.500
Nom Wt. per ft.	.29	.54	.74	1.09	1.39	2.17	3.00	3.63	5.02	7.67	1.025	1.247	1.497	1.822	2.054	2.858	3.767	4.300
Price per foot	.11	.11	.11	.12	.15	.22	.30	.36	.50	.81	1.05	1.33	1.50	1.95	2.16	2.90	3.80	4.30

Double Extra Strong Pipe—Plain Ends.



Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8
Actual Outside Diam.	0.84	1.05	1.315	1.66	1.90	2.375	2.875	3.50	4.00	4.50	5.00	5.563	6.625	7.625	8.625
Nominal Inside "	.244	.422	.587	.885	1.088	1.491	1.755	2.284	2.716	3.136	3.564	4.063	4.875	5.875	6.875
Thickness	.298	.314	.364	.388	.406	.442	.560	.608	.642	.682	.718	.750	.875	.875	.875
Nom. Weight per foot	1.70	2.44	3.65	5.20	6.40	9.02	13.68	18.56	22.75	27.48	32.53	38.12	53.11	62.38	71.62
Price per foot	.25	.30	.37	.52	.65	.95	1.37	1.92	2.45	2.85	3.30	3.80	5.30	6.25	7.20

Extra Strong and Double Extra Strong Pipe will be shipped in random lengths and plain ends unless otherwise ordered.

For Pipe fitted with threads and couplings an extra charge will be made above regular.

For cut lengths an extra charge will be made above random.

For Galvanized an extra charge will be made above black.

Prices for cutting and threading Extra and Double Extra Strong Pipe, same as for Standard Pipe, shown in Table of Pipe Cutting.

Pipe Cutting, Line, and Drive Pipe.

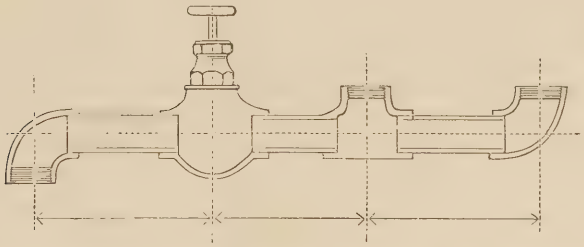


DIAGRAM SHOWING SCREW-END SECTION OF PIPE, VALVE AND FITTINGS.

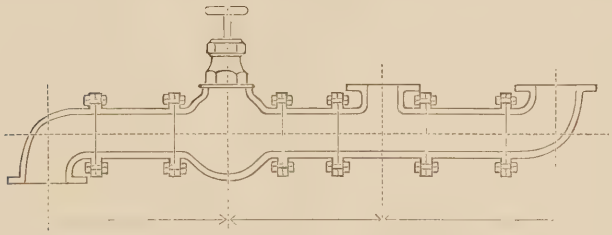


DIAGRAM SHOWING FLANGE-END SECTION OF PIPE, VALVE AND FITTINGS.

In making up pipe sketches special care should be taken that all measurements are accurately given from center to center, in the manner shown in these diagrams.

It will also enable us to execute orders more intelligently if the service in which the material is to be employed is described, and the working pressure specified.

PRICE FOR PIPE CUTTING—(One Cut and Thread).

Size Pipe	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price	.06	.06	.06	.06	.06	.06	.08	.10	.14	.20	.30	.40

Size Pipe	4	4 1/2	5	6	7	8	9	10	12	14	15	16
Price	.40	.50	.60	.80	1.00	1.20	2.00	2.50	3.50	6.00	6.50	7.00

Cutting only, one-half above rates.

Line Pipe.

Nominal Inside Diameter	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9	10	12
" Outside "	2.37	2.87	3.50	4.00	4.50	5.00	5.56	6.62	7.62	8.62	9.68	10.75	12.75
Weight per foot	3.61	5.74	7.54	9.00	10.66	12.34	14.50	18.76	23.27	28.18	33.70	40.06	49.00
No. Threads per inch of Screw	11 1/2	8	8	8	8	8	8	8	8	8	8	8	8

Prices on Application.

Line Pipe of special weight, etc., made to order. Prices and information will be furnished on application.

Heavy Drive Well Pipe.

With the Allison Patent Vanishing Thread.

Full lengths range from 18 to 20 feet.
Half " " 9 to 10 "
Third lengths range from 6 to 7 feet.
Fourth " " 4 feet 6 inches to 5 feet.

Each length is fitted with one coupling without extra charge.

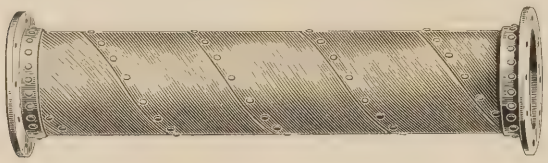
Standard Full Weight Drive Pipe.

Cut in lengths to 3 feet to 9 feet long, and threaded specially so that the ends of pipe will butt together when screwed up with Patent Couplings.

Net Prices for Drive Pipe quoted on Application.

Spiral Riveted Flanged Pressure Pipe.

Double Galvanized or Asphalted.

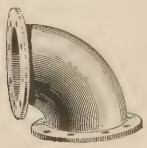


Each length tested to 150 pounds Hydrostatic Pressure.
List prices per lineal foot include Flanges attached.

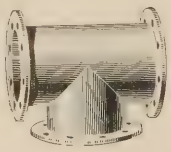
Size	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Thick. B. W. G. No	20	20	20	18	18	18	18	16	16	16	16	14	14	14	14	14	12	12
Double Galv	.50	.70	1.00	1.20	1.40	1.70	2.00	2.60	2.85	3.15	3.60	4.00	4.40	5.00	6.00	7.00	9.00	10.50
Asphalted	.35	.45	.55	.75	.80	.95	1.10	1.45	1.55	1.80	1.95	2.50	2.75	3.05	3.50	3.90	5.55	6.00
App. W't, per ft.	2¼	3	4	5	6	7	8	11	12	14	15	20	22	24	29	34	40	50
App. Burst. Pres.	900	700	550	700	600	500	450	500	450	400	380	470	450	400	370	325	365	335

Furnished Galvanized in lengths of 20 feet and less.
Furnished Asphalted in lengths of 25 feet and less.
Sections less than 5 feet long will be charged as 5 feet lengths.
Double Galvanized this pipe is suitable for Exhaust Steam, Compressed Air, Pump Suction and Discharge, Refrigerating Coils, Pulp and Paper Mill Service, etc.
Asphalted it is adapted to Dredging and all Hydraulic Service, Underground Lines, etc.
Bolts and Gaskets are not included in list prices.

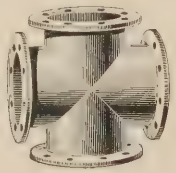
Fittings for Spiral Riveted Pipe—Black and Galvanized.



90° ELBOW.



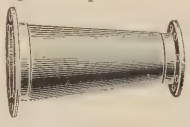
TEE.



CROSS.

Size	3	4	5	6	7	8	9	10	11
90° Elbow, Plain	1.25	1.50	2.00	2.75	3.50	4.50	6.00	6.80	8.75
90° Elbow, Galvanized	1.60	2.10	2.85	3.75	5.10	6.50	8.75	10.00	12.50
45° Elbow, Plain	1.25	1.50	2.00	2.75	3.50	4.50	6.00	6.80	8.75
45° Elbow, Galvanized	1.60	2.10	2.85	3.75	5.10	6.50	8.75	10.00	12.50
Straight Tee, Plain	1.75	2.20	3.10	3.90	5.00	6.60	8.75	10.50	13.00
Straight Tee, Galvanized	2.35	3.25	4.40	5.50	7.00	9.30	12.50	15.20	18.20
Crosses, Plain	3.00	3.70	4.80	5.70	7.70	9.80	12.00	14.50	18.00
Crosses, Galvanized	4.15	5.30	6.70	8.00	11.00	13.75	16.80	21.00	25.00
Size	12	13	14	15	16	18	20	22	24
90° Elbow, Plain	10.00	12.75	14.00	16.50	20.00	26.00	33.00	44.00	54.00
90° Elbow, Galvanized	14.00	19.15	21.50	26.00	31.00	40.00	51.00	68.00	75.00
45° Elbow, Plain	10.00	12.75	14.00	16.50	20.00	26.00	33.00	44.00	54.00
45° Elbow, Galvanized	14.00	19.15	21.50	26.00	31.00	40.00	51.00	68.00	75.00
Straight Tee, Plain	14.50	17.00	20.00	24.00	30.00	45.00	58.00	63.00	85.00
Straight Tee, Galvanized	21.00	25.00	30.00	36.00	45.00	70.00	01.00	09.00	135.00
Crosses, Plain	21.00	25.00	29.50	36.00	44.00	51.00	68.00	84.00	99.00
Crosses, Galvanized	30.00	35.00	41.00	50.00	61.00	71.00	95.00	118.00	135.00

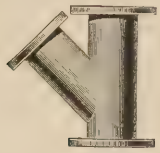
Reducing Fittings ten per cent. higher.



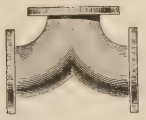
REDUCER.

Size	4	5	6	7	8	9	10	11	12
Reducer, Plain	3.00	3.50	4.50	6.00	7.00	9.00	10.00	12.00	13.50
Reducer, Galvanized	4.00	5.00	6.00	8.00	9.50	12.00	13.50	15.00	17.00
Size		13	14	15	16	18	20	22	24
Reducer, Plain		15.00	17.00	18.00	20.00	24.00	28.00	30.00	35.00
Reducer, Galvanized		20.00	23.00	24.00	26.00	32.00	37.00	40.00	45.00

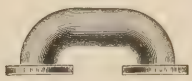
Fittings for Spiral Riveted Pipe, Black and Galvanized.



Y BRANCH.



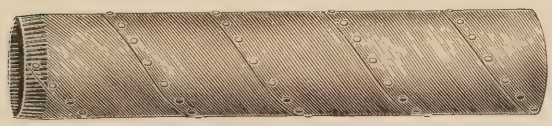
DOUBLE ELBOW.



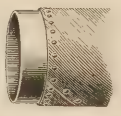
RETURN BEND.

Size	3	4	5	6	7	8	9	10	11
Y Branch, Plain	3.00	3.70	4.80	5.70	7.70	9.80	12.00	14.50	18.00
" Galvanized	4.15	5.30	6.70	8.00	11.00	13.75	16.80	21.00	25.00
Reducing Y Branch, Plain	3.40	3.85	5.50	6.90	8.80	11.50	16.30	20.25	24.65
" " Galvanized	4.85	5.70	7.70	10.00	12.90	17.25	22.10	31.00	35.20
Double Elbow, Plain	2.15	2.40	3.40	4.30	5.50	7.25	10.15	12.65	15.40
" " Galvanized	3.00	3.60	4.85	6.30	8.05	10.80	15.20	19.35	22.00
Return Bend, Plain	2.50	3.00	4.00	5.80	7.00	9.00	12.40	13.60	17.50
" " Galvanized	3.20	4.20	5.70	8.20	10.20	13.40	18.00	20.00	26.00
Center to Center, Return Bends	7¼	8¾	10½	12½	14½	16½	18½	20½	22
Flanges, Plain	.24	.32	.40	.48	.64	.72	.96	1.12	1.20
" Galvanized	.39	.52	.65	.78	1.04	1.17	1.56	1.82	1.95
Discs, Plain	.28	.40	.48	.72	.96	1.12	1.44	1.62	2.00
" Galvanized	.45	.65	.78	1.17	1.56	1.82	2.34	2.47	3.25
Gaskets	.09	.10	.12	.16	.18	.23	.31	.40	.45
Size	12	13	14	15	16	18	20	22	24
Y Branch, Plain	21.00	25.00	29.50	36.00	44.00	51.00	68.00	84.00	99.00
" Galvanized	30.00	35.00	41.00	50.00	61.00	71.00	95.00	118.00	135.00
Reducing Y Branch, Plain	26.40	29.00	32.70	38.70	44.00	51.00	59.80	68.60	79.20
" " Galvanized	39.60	44.00	53.70	65.10	77.45	88.00	98.60	105.60	123.20
Double Elbow, Plain	16.50	18.15	20.50	24.20	27.50	31.90	37.40	43.00	49.50
" " Galvanized	24.75	27.50	33.50	40.70	48.40	55.00	61.60	66.00	77.00
Return Bend, Plain	21.00	24.00	27.00	30.00	34.00	40.00	46.00	52.00	60.00
" " Galvanized	31.60	38.30	44.60	52.00	60.00	68.00	77.00	84.00	90.00
Center to Center, Return Bends	24½	26	28	30	32	36	40	44	48
Flanges, Plain	1.28	1.44	1.60	1.92	2.72	3.12	3.44	5.60	6.00
" Galvanized	2.08	2.34	2.60	3.12	4.42	5.07	5.59	9.10	9.75
Discs, Plain	2.40	2.80	3.36	3.68	4.16	5.60	7.20	8.80	10.40
" Galvanized	3.90	4.55	5.46	6.00	6.75	9.00	11.70	14.30	16.90
Gaskets	.50	.56	.63	.75	.90	1.08	1.25	1.75	2.00

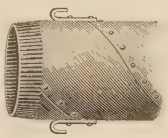
Spiral Riveted Pipe.



WITH CRIMPED END.



SLEEVE END.
For Slip Joint.



CRIMPED END.
With Lugs.

No. 26. Birmingham Wire Gauge—.018 inch thick.

Size	3	4	5	6
Black	.17	.21	.25	.28
Asphalted	.20	.25	.30	.34
Galvanized	.25	.33	.40	.46

No. 24. Birmingham Wire Gauge—.022 inch thick.

Size	3	4	5	6	7	8	9	10	11	12
Black	.20	.25	.30	.33	.37	.42	.48	.54	.60	.68
Asphalted	.23	.29	.35	.39	.44	.50	.57	.64	.71	.80
Galvanized	.30	.38	.45	.50	.60	.65	.75	.85	.90	1.05

No. 22. Birmingham Wire Gauge—.028 inch thick.

Size	3	4	5	6	7	8	9	10	11	12	13	14
Black	.24	.30	.37	.40	.45	.53	.60	65	.70	.82	.90	1.00
Asphalted	.27	.34	.42	.46	.52	.61	.69	.75	.81	.94	1.03	1.14
Galvanized	.32	.43	.53	.60	.65	.75	.90	1.00	1.10	1.25	1.35	1.45

No. 20. Birmingham Wire Gauge—.035 inch thick.

Size	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Black	.27	.35	.40	.46	.51	.58	.66	.72	.78	.90	1.00	1.10	1.20	1.30	1.40	1.60	1.80	1.95
Asphalted	.30	.39	.45	.52	.58	.66	.75	.82	.89	1.02	1.13	1.24	1.35	1.46	1.58	1.80	2.02	2.19
Galvanized	.38	.48	.60	.68	.75	.85	.97	1.05	1.20	1.35	1.50	1.60	1.75	1.85	2.05	2.30	2.55	2 85

No. 18. Birmingham Wire Gauge—.049 inch thick.

Size	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Black	.34	.42	.50	.57	.63	.73	.82	.90	.95	1.15	1.25	1.35	1.50	1.60	1.75	2.00	2.20	2.40
Asphalted	.37	.46	.55	.63	.70	.81	.91	1.00	1.06	1.27	1.38	1.49	1.65	1.76	1.93	2.20	2.42	2.64
Galvanized	.46	.58	.70	.85	.90	1.05	1.18	1.30	1.40	1.65	1.80	1.95	2.10	2.25	2.55	2.90	3.10	3.35

Price, No. 26, with Plain or Crimped End.
Other Gauges with Plain or Crimped End or with Sleeve for Slip Joint.

Spiral Riveted Pipe.

No. 16. Birmingham Wire Gauge—.065 inch thick.

Size	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Black	.50	.60	.70	.80	.93	1.08	1.15	1.20	1.45	1.55	1.70	1.85	2.00	2.20	2.45	2.80	3.00
Asphalted	.54	.65	.76	.87	1.01	1.17	1.25	1.31	1.57	1.68	1.84	2.00	2.16	2.38	2.65	3.02	3.24
Galvanized	.70	.85	1.00	1.10	1.28	1.47	1.55	1.70	2.05	2.15	2.40	2.60	2.75	3.10	3.40	3.90	4.30

No. 14. Birmingham Wire Gauge —.083 inch thick.

Size	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Black	.89	1.02	1.15	1.32	1.40	1.50	1.80	1.90	2.10	2.25	2.40	2.75	3.10	3.40	3.70
Asphalted	.95	1.09	1.23	1.41	1.50	1.61	1.92	2.03	2.24	2.40	2.56	2.93	3.30	3.62	3.94
Galvanized	1.15	1.35	1.50	1.70	1.80	1.95	2.35	2.50	2.70	2.90	3.15	3.60	4.00	4.55	4.85

No. 12. Birmingham Wire Gauge—.109 inch thick.

Size	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Black	1.25	1.40	1.55	1.70	1.90	2.25	2.50	2.70	2.90	3.10	3.25	3.60	4.00	4.35	4.70
Asphalted	1.31	1.47	1.63	1.79	2.00	2.36	2.62	2.83	3.04	3.25	3.41	3.78	4.20	4.57	4.94
Galvanized	1.90	2.10	2.30	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.70	5.25	5.75	6.25

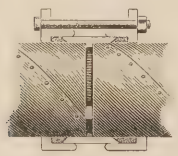
No. 26 Gauge and No. 24 Gauge in lengths of 10 feet and less.

No. 22 Gauge in lengths of 20 feet and less.

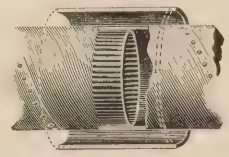
All other Gauges can be furnished in lengths of 25 feet and less, Black or Asphalted, and of 20 feet and less Galvanized. Lists cover plain or crimped ends, or with sleeve for slip joints.

Wrought Iron Lugs for Slip Joints.

Black, each ..... .15 Galvanized, each ..... .18



BOLTED JOINT.
For Sleeve Connections.



CEMENT JOINT.
For Crimped Ends.



CLAMP BAND.
For Service Connection.

Bolted Joint.

Size	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Each	1.15	1.40	1.70	2.10	2.50	3.25	4.00	4.75	5.50	6.00	6.50	7.25	8.00	8.50	10.00	11.50	12.50	13.50

Cement Joint for Crimped Ends.

Price of sleeves for Cement Joint same as price for one foot of pipe of same gauge, but 2 inches larger in diameter than main pipe.

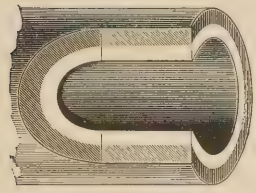
Wrought Iron Clamp Band for Making Service Connections.

Size	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18
Black, each	.95	1.10	1.25	1.40	1.50	1.60	1.75	1.90	2.00	2.10	2.25	2.40	2.50	2.60	2.90

The Bolted Joint is recommended for use where the pressure is excessive, as it admits of making a perfectly tight joint by means of the rubber packing. By its use one or more lengths of pipe can be taken out and replaced without disturbing the balance of the line, and if necessary the whole line can be moved and the same pipe and joints be used again. Owing to the flexibility of the rubber packing, a certain amount of settling of the ground from its original level will not weaken the joint or cause it to leak. As will be seen, the Bolted Joint can be readily tapped for service connection.

The Cement Joint is for use where a moderate and constant pressure is maintained, and where the distribution is by gravity and no tapping for service is required. It consists simply of a sheet-iron sleeve, exceeding the diameter of the pipe by two inches, and from eight to twelve inches long. This sleeve encircles the pipe as shown, the annular space between the sleeve and pipe being packed with cement. In most cases this is the cheapest and simplest joint that can be used with spiral pipe.

Tin Lined and Lead Lined Iron Pipe.



LEAD LINED PIPE.

The Tin Lined Pipe is made by pouring melted tin into a wrought iron pipe. While melted, the tin is inseparably united to the iron and formed into a substantial inner pipe. The Lead Lined Pipe is made in the same way.

As the substantial lining cannot be separated from the iron, even by cutting, bending or hot water, this composite pipe can be used successfully where tin, lead, brass or iron pipes alone are too expensive or unsatisfactory.

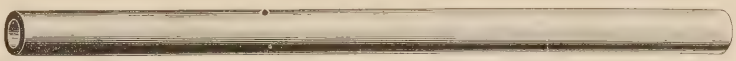
Lined Pipe, 10-foot Lengths, Threaded, without Couplings.

Inside Diameter	½ inch	¾ inch	1 inch	1¼ inch	1½ inch	2 inch	3 inch
Per Foot	.33	.40	.53	.69	.86	1.06	1.95

Lined Fittings.

	½ inch.	¾ inch	1 inch.	1¼ inch.	1½ inch.	2 inch.	3 inch.
Elbows	.28	.35	.50	.85	1.10	1.50	4.50
Couplings	.25	.37	.50	.60	.90	1.35	3.50
Tees	.40	.50	.75	1.00	1.30	1.75	5.50
Reducing Elbows	.35	.45	.62	1.10	1.40	1.90	5.65
" Couplings	.32	.45	.65	.90	1.12	1.85	4.50
" Tees	.50	.63	.95	1.25	1.65	2.20	6.90
Drop Tees	.80	1.00	1.50	2.00	----	----	----
45° Elbows	.34	.42	.70	1.02	1.32	1.80	5.40
Nipples, Close	.25	.30	.40	.60	.90	1.25	3.50
Unions	.50	.60	.80	1.20	1.60	2.20	6.00

Seamless Drawn Brass Pipe, Iron Pipe Sizes, Standard and Extra Heavy.



BRASS PIPE, STANDARD IRON PIPE SIZE.

Stock Length is 12 feet.

Iron Pipe Sizes.	Actual Outside Diameter.	Actual Inside Diameter.	Approximate Weight Per Foot Brass.	Iron Pipe Sizes.	Actual Outside Diameter.	Actual Inside Diameter.	Approximate Weight Per Foot Brass.
⅛	.405	.281	.25	2½	2.875	2.5	5.75
¼	.540	.375	.43	3	3.500	3.062	8.30
⅜	.675	.484	.62	3½	4.000	3.5	10.90
½	.840	.625	.90	4	4.500	4.	12.70
¾	1.050	.808	1.25	4½	5.000	4.5	13.90
1	1.315	1.062	1.70	5	5.560	5.062	15.75
1¼	1.660	1.368	2.50	6	6.625	6.125	18.31
1½	1.900	1.6	3.00	7	7.620	7.020	26.286
2	2.375	2.062	4.00	8	8.620	7.980	29.881



BRASS PIPE, EXTRA HEAVY IRON PIPE SIZE.

Stock Length is 12 feet.

Iron Pipe Sizes.	Actual Outside Diameter.	Actual Inside Diameter.	Approximate Weight Per Foot Brass.	Iron Pipe Sizes.	Actual Outside Diameter.	Actual Inside Diameter.	Approximate Weight Per Foot Brass.
⅛	.405	.205	.370	2	2.375	1.933	5.460
¼	.504	.294	.625	2½	2.875	2.315	8.300
⅜	.675	.421	.830	3	3.500	2.892	11.200
½	.840	.542	1.200	3½	4.00	3.358	13.700
¾	1.050	.736	1.660	4	4.50	3.818	16.500
1	1.315	.951	2.360	5	5.563	4.813	22.800
1¼	1.660	1.272	3.300	6	6.625	5.750	32.00
1½	1.900	1.494	4.250				

Standard Lap-Welded Boiler Tubes.



Actual Outside Diameter, Inches.	Price per Foot.	Thickness, Inches.	Thickness Nearest B. W. G.	Nominal Weight per Foot.
1	.30	.095	13	.90
1¼	.28	.095	13	1.15
1½	.27	.095	13	1.40
1¾	.22	.095	13	1.66
2	.20	.095	13	1.91
2¼	.24	.095	13	2.16
2½	.28	.109	12	2.75
2¾	.34	.109	12	3.04
3	.35	.109	12	3.33
3¼	.40	.120	11	3.96
3½	.44	.120	11	4.28
3¾	.50	.120	11	4.60
4	.55	.134	10	5.47
4½	.62	.134	10	6.17
5	.75	.148	9	7.58
6	1.00	.165	8	10.16
7	1.20	.165	8	11.90
8	1.50	.165	8	13.65
9	1.70	.180	7	16.76
10	2.10	.203	6	21.00
11	2.50	.220	5	25.00
12	2.90	.229	4½	28.50
13	3.20	.238	4	32.06
14	3.65	.248	3½	36.00
15	4.10	.259	3	40.60
16	4.60	.270	2½	45.20

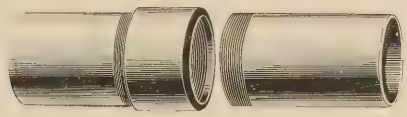
Extra Wire Gauge Boiler Tubes.

For extra wire gauge boiler tubes, away from standard not exceeding four wire gauges, one cent for each inch in diameter of tube for each additional gauge will be charged and added to net of invoice. Tubes more than four wire gauges heavier than standard will be charged by the pound, the same as plain end stay tubes, arch pipes, dry pipes and water grates.

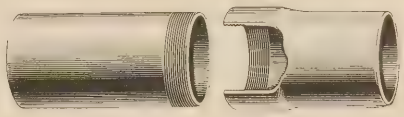
Above lists apply to tubes up to 20 feet long. Tubes in longer lengths quoted specially.

Lap=Welded Casing.

Fitted with Perfect V Threads and Patent Protecting Sleeve Sockets, or Inserted Joint.



SLEEVE SOCKET.



INSERTED JOINT.

Nominal Inside Diameter, Inches.	Actual Outside Diameter, Inches.	Price per Foot, Sleeve Socket and Inserted Joint.	Nominal Weight per Foot Pounds.	Number of Threads per Inch of Screw.
2	2¼	.23	2.22	14
2¼	2½	.29	2.82	14
2½	2¾	.32	3.13	14
2¾	3	.35	3.45	14
3	3¼	.41	4.10	14
3¼	3½	.45	4.45	14
3½	3¾	.48	4.78	14
3¾	4	.56	5.56	14
4	4¼	.60	6.00	14
4¼	4½	.64	6.36	14
4¼	4½	1.00	9.38	14
4½	4¾	.68	6.73	14
4½	4¾	1.00	9.39	14
4¾	5	.78	7.80	14
5	5¼	.82	8.20	14
5	5¼	1.00	9.86	14
5	5¼	1.30	12.80	11½
5	5¼	1.50	15.88	11½
5 3/16	5½	.87	8.62	14
5 3/16	5½	1.30	12.49	11½
5⅝	6	1.05	10.46	14
5⅝	6	1.20	12.04	11½
5⅝	6	1.40	14.20	11½
5⅝	6	1.60	16.70	11½
6¼	6⅝	1.16	11.58	14
6¼	6⅝	1.35	13.32	14 and 11½
6¼	6⅝	1.70	17.02	11½
6⅝	7	1.24	12.34	14
6⅝	7	1.75	17.51	11½ and 10
7¼	7⅝	1.36	13.55	14
7⅝	8	1.55	15 41	11½
7⅝	8	2.10	20.17	11½
8¼	8⅝	1.61	16.07	11½
8¼	8⅝	2.00	20.10	11½
8¼	8⅝	2.40	24.38	11½ and 8
8⅝	9	1.76	17.60	11½
9⅝	10	2.20	21.90	11½
10⅝	11	2.68	26.72	11½
11⅝	12	3.05	30.35	11½
12½	13	3.38	33.78	11½

Random lengths with threads and couplings will be shipped unless otherwise ordered.
For cut lengths an extra charge will be made above random.
For Galvanized or Asphalted an extra charge will be made above black.

List of Standard Sizes of Cast Iron Fittings.

Sizes differing from Standard Sizes, if furnished, are to be charged at five per cent. gross discount higher than Standard Sizes.

Elbows.

Straight Sizes. 1/4 3/8 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

Elbows—Reducing Sizes.

1/2 x 3/8
3/4 x 1/2
1 x 3/4
1 x 1/2
1 1/4 x 1
1 1/4 x 3/4
1 1/4 x 1/2
1 1/2 x 1 1/4
1 1/2 x 1
1 1/2 x 3/4
2 x 1 1/2
2 x 1 1/4
2 x 1
2 1/2 x 2
2 1/2 x 1 1/2
3 x 2 1/2
3 x 2
3 1/2 x 3
4 x 3 1/2
4 x 3
4 x 2 1/2
4 1/2 x 4
5 x 4
6 x 5
8 x 6

45° Elbows.

Straight Sizes..... 3/8 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

Right and Left Elbows.

Straight Sizes..... 1/4 3/8 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3

Reducing Couplings.

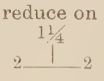
2 1/2 x 2
2 1/2 x 1 1/2
3 x 2 1/2
3 x 2
3 1/2 x 3
3 1/2 x 2 1/2
4 x 3 1/2
4 x 3
4 x 2 1/2
4 x 2
4 1/2 x 4
5 x 4
5 x 3
6 x 5
6 x 4
6 x 3
7 x 6
8 x 6
10 x 8
12 x 10

Tees.

Straight Sizes..... 1/4 3/8 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

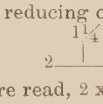
Tees—Reducing Sizes.

NOTE.—Tees, which reduce on the outlet, thus:



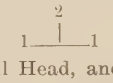
are read, 2 x 1 1/4

Tees reducing on run, thus:



are read, 2 x 1 1/2 x 1 1/4

Tees with both ends of run the same size, with the outlet larger, thus:



are known as Bull Head, and are read 1 x 2.

Reducing on Outlet.

1/2 x 3/8
3/4 x 1/2
3/4 x 3/8
1 x 3/4
1 x 1/2
1 x 3/8
1 1/4 x 1
1 1/4 x 3/4
1 1/4 x 1/2
1 1/2 x 1 1/4
1 1/2 x 1
1 1/2 x 3/4
1 1/2 x 1/2
2 x 1 1/2
2 x 1 1/4
2 x 1
2 x 3/4
2 x 1/2
2 1/2 x 2
2 1/2 x 1 1/2
2 1/2 x 1 1/4
2 1/2 x 1
2 1/2 x 3/4
3 x 2 1/2
3 x 2
3 x 1 1/2
3 x 1 1/4
3 x 1
3 x 3/4

Reducing on Run.

1/2 x 3/8 x 1/2
1/2 x 3/8 x 3/8
3/4 x 1/2 x 1
3/4 x 1/2 x 3/4
3/4 x 1/2 x 1/2
3/4 x 3/8 x 3/4
3/4 x 3/8 x 3/8
1 x 3/4 x 2
1 x 3/4 x 1 1/2
1 x 3/4 x 1 1/4
1 x 3/4 x 1
1 x 3/4 x 3/4
1 x 3/4 x 1/2
1 x 1/2 x 1
1 x 1/2 x 3/4
1 x 1/2 x 1/2
1 x 3/8 x 1
1 1/4 x 1 x 2
1 1/4 x 1 x 1 1/2
1 1/4 x 1 x 1 1/4
1 1/4 x 1 x 1
1 1/4 x 1 x 3/4
1 1/4 x 1 x 1/2
1 1/4 x 3/4 x 2
1 1/4 x 3/4 x 1 1/2
1 1/4 x 3/4 x 1 1/4
1 1/4 x 3/4 x 1
1 1/4 x 3/4 x 3/4
1 1/4 x 1/2 x 1 1/2
1 1/4 x 1/2 x 1 1/4

Bull Head.

3/8 x 1/2
1/2 x 1
1/2 x 3/4
3/4 x 2
3/4 x 1 1/2
3/4 x 1 1/4
3/4 x 1
1 x 2
1 x 1 1/2
1 x 1 1/4
1 1/4 x 2
1 1/4 x 1 1/2
1 1/2 x 2 1/2
1 1/2 x 2
2 x 3
2 x 2 1/2
2 1/2 x 4
2 1/2 x 3
3 x 4
3 x 3 1/2
3 1/2 x 4
4 x 6
4 x 5
5 x 6
6 x 8
6 x 7

List of Standard Sizes of Cast Iron Fittings.

Tees.

Reducing on Outlet.

3½ x 3
3½ x 2½
3½ x 2
3½ x 1½
3½ x 1¼
3½ x 1

4 x 3½
4 x 3
4 x 2½
4 x 2
4 x 1½
4 x 1¼
4 x 1
4 x ¾

4½ x 4
4½ x 3½
4½ x 3
4½ x 2½
4½ x 2

5 x 4
5 x 3½
5 x 3
5 x 2½
5 x 2
5 x 1½
5 x 1¼

6 x 5
6 x 4
6 x 3½
6 x 3
6 x 2½
6 x 2

7 x 6
7 x 5
7 x 4
7 x 3
8 x 6
8 x 5
8 x 4
8 x 3½
8 x 3
8 x 2½
8 x 2
9 x 5
10 x 8
10 x 6
10 x 5
10 x 4
12 x 10
12 x 8
12 x 6

14 x 8
14 x 6

Reducing on Run.

1½ x 1¼ x 2
1½ x 1 x 2
1½ x ¾ x 2
1½ x 1¼ x 1½
1½ x 1¼ x 1¼
1½ x 1¼ x 1
1½ x 1¼ x ¾
1½ x 1¼ x ½
1½ x 1 x 1½
1½ x 1 x 1¼
1½ x 1 x 1
1½ x 1 x ½
1½ x ¾ x 1½
1½ x ¾ x 1¼
1½ x ¾ x 1
1½ x ¾ x ¾
1½ x ½ x 1½
1½ x ½ x 1¼
2 x 1½ x 2½
2 x 1½ x 2
2 x 1½ x 1½
2 x 1½ x 1¼
2 x 1½ x 1
2 x 1½ x ¾
2 x 1½ x ½
2 x 1¼ x 2
2 x 1¼ x 1½
2 x 1¼ x 1¼
2 x 1¼ x 1
2 x 1¼ x ¾
2 x 1 x 2
2 x 1 x 1½
2 x 1 x 1¼
2 x 1 x 1
2 x 1 x ¾
2 x ¾ x 2
2 x ¾ x 1½
2 x ½ x 2
2½ x 2 x 3
2½ x 2 x 2½
2½ x 2 x 2
2½ x 2 x 1½
2½ x 2 x 1¼
2½ x 2 x 1
2½ x 1½ x 2½
2½ x 1½ x 2
2½ x 1½ x 1½
2½ x 1½ x 1
2½ x 1¼ x 2½
2½ x 1¼ x 2
2½ x 1 x 2½
2½ x ¾ x 2½
3 x 2½ x 3
3 x 2½ x 2½
3 x 2½ x 2
3 x 2½ x 1½
3 x 2½ x 1¼
3 x 2½ x 1
3 x 2 x 3
3 x 2 x 2½
3 x 2 x 2
3 x 2 x 1½
3 x 2 x 1¼
3 x 2 x 1
3 x 1½ x 3
3 x 1½ x 2½
3 x 1½ x 2
3 x 1¼ x 3
3 x 1 x 3

Reducing on Run.

3½ x 3 x 3
3½ x 3 x 2½
3½ x 3 x 2
3½ x 3 x 1½
3½ x 2½ x 3
3½ x 2½ x 2½
3½ x 2½ x 2
3½ x 2 x 3½
3½ x 1½ x 3½
3½ x 1¼ x 3½
3½ x 1 x 3½
4 x 3½ x 3½
4 x 3½ x 3
4 x 3½ x 2½
4 x 3 x 4
4 x 3 x 3½
4 x 3 x 3
4 x 3 x 2½
4 x 3 x 2
4 x 3 x 1½
4 x 3 x 1¼
4 x 3 x 1
4 x 3 x ¾
4 x 2½ x 4
4 x 2½ x 3
4 x 2½ x 2½
4 x 2½ x 2

4 x 2 x 4
4 x 2 x 3
4 x 2 x 2½
4 x 2 x 2
4 x 2 x 1½
4 x 1½ x 4
4 x 1¼ x 4
4 x 1 x 4
5 x 4 x 5
5 x 4 x 4
5 x 4 x 3
5 x 4 x 2½
5 x 4 x 2
5 x 3 x 5
5 x 3 x 4
5 x 3 x 3
5 x 3 x 2½
5 x 3 x 2
5 x 2½ x 5
5 x 2½ x 4
5 x 2½ x 3
5 x 2 x 5
6 x 5 x 6
6 x 5 x 5
6 x 4 x 6
6 x 3 x 6
6 x 2½ x 6
7 x 6 x 7
7 x 6 x 6
7 x 6 x 5
7 x 5 x 5
8 x 7 x 6
8 x 6 x 8
8 x 6 x 7
8 x 6 x 6
8 x 5 x 8
8 x 5 x 5
8 x 4 x 8
10 x 8 x 8
12 x 8 x 10
12 x 8 x 8

List of Standard Sizes of Cast Iron Fittings.

Crosses.

Straight Sizes—— 3/8 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

Crosses—Reducing Sizes.

NOTE—The outlets of a Cross are always the same size, and are indicated by the last figure. Thus:

A Cross 3/4 (1/2 above, 3/4 left, 3/4 right, 1/2 below) is called a 3/4 x 1/2 Cross. A Cross reducing on the run, thus, 1 1/2 — 1 — 1 1/4 is called a — 1 1/2 x 1 1/4 x 1 Cross.

Reducing on Outlets.

3/4 x 1/2
1 x 3/4
1 x 1/2
1 1/4 x 1
1 1/4 x 3/4
1 1/4 x 1/2
1 1/2 x 1 1/4
1 1/2 x 1
1 1/2 x 3/4
1 1/2 x 1/2
2 x 1 1/2
2 x 1 1/4
2 x 1
2 x 3/4
2 1/2 x 2
2 1/2 x 1 1/2
2 1/2 x 1 1/4
2 1/2 x 1
2 1/2 x 3/4

Reducing on Outlets.

3 x 2 1/2
3 x 2
3 x 1 1/2
3 x 1 1/4
3 x 1
3 x 3/4
3 1/2 x 3
3 1/2 x 2 1/2
3 1/2 x 2
4 x 3 1/2
4 x 3
4 x 2 1/2
4 x 2
5 x 4
5 x 3
5 x 2 1/2
5 x 2
6 x 5
6 x 4
6 x 3 1/2
6 x 3

Reducing on Outlets.

6 x 2 1/2
6 x 2
7 x 6
7 x 5
8 x 7
8 x 6
10 x 8
10 x 7
12 x 10
12 x 8

Return Bends—Close Pattern.

Sizes—— 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3

Return Bends—Open Pattern.

Sizes—— 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3

Offsets—To Offset 4, 6 and 8 Inches.

Sizes—— 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 5 6

Bushings.

NOTE—Bushings reducing one size only up to and including 2 1/2 inch are malleable, and will be found, therefore, listed among the Malleable Fittings.

1/2 x 1/4
3/4 x 3/8
3/4 x 1/4
1 x 1/2
1 x 3/8
1 x 1/4
1 1/4 x 3/4
1 1/4 x 1/2
1 1/4 x 3/8
1 1/2 x 1
1 1/2 x 3/4
1 1/2 x 1/2
2 x 1 1/4
2 x 1
2 x 3/4
2 x 1/2
2 1/2 x 1 1/2
2 1/2 x 1 1/4
2 1/2 x 1
2 1/2 x 3/4
3 x 2 1/2
3 x 2
3 x 1 1/2
3 x 1 1/4
3 x 1
3 1/2 x 3
3 1/2 x 2 1/2
3 1/2 x 2
3 1/2 x 1 1/2
3 1/2 x 1 1/4
3 1/2 x 1
4 x 3 1/2
4 x 3
4 x 2 1/2
4 x 2
4 x 1 1/2
4 x 1 1/4
4 x 1
4 1/2 x 4
4 1/2 x 3 1/2
4 1/2 x 3
4 1/2 x 2 1/2
5 x 4 1/2
5 x 4
5 x 3 1/2
5 x 3
5 x 2 1/2
5 x 2
6 x 5
6 x 4 1/2
6 x 4
6 x 3 1/2
6 x 3
6 x 2 1/2
6 x 2
7 x 6
7 x 5
7 x 4 1/2
7 x 4
7 x 3 1/2
7 x 3
7 x 2 1/2
7 x 2
8 x 7
8 x 6
8 x 5
8 x 4
8 x 3
9 x 8
9 x 7
9 x 6
10 x 8
10 x 6
12 x 10
12 x 8
12 x 6

Caps.

Sizes—— 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

Plugs.

Sizes—— 1/4 3/8 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

Locknuts.

Sizes—— 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

Y Branches.

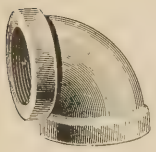
REDUCING SIZES TO ORDER

Sizes—— 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 5 6 7 8 9 10

Flange Unions.

Sizes—— 1/2 3/4 1 1 1/4 1 1/2 2 2 1/2 3 3 1/2 4 4 1/2 5 6 7 8 9 10 12

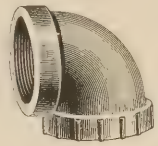
Cast Iron Fittings.



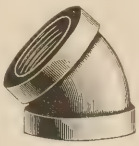
ELBOW.



REDUCING ELBOW.



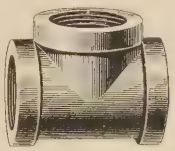
RIGHT AND LEFT ELBOW.



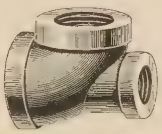
45° ELBOW.

Sizes	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Elbow, Plain	.05	.05	.06	.08	.10½	.16	.20	.28	.50	.75
Elbow, Galvanized	.10	.10	.12	.16	.21	.32	.40	.56	1.00	1.50
Reducing Elbow, Plain	--	.06	.07	.09	.12	.18	.23	.32	.60	.85
Reducing Elbow, Galvanized	--	.12	.14	.18	.24	.36	.46	.64	1.20	1.70
Right and Left Elbow, Plain	.06	.06	.07	.09	.12	.18	.23	.32	.60	.85
45° Elbow, Plain	.06	.06	.07	.10	.12	.19	.24	.34	.60	.90
45° Elbow, Galvanized	.12	.12	.14	.20	.24	.38	.48	.68	1.20	1.80

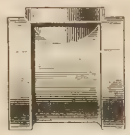
Sizes	3½	4	4½	5	6	7	8	9	10	12
Elbow, Plain	1.05	1.20	1.75	2.00	2.75	4.70	6.75	9.00	13.50	20.00
Elbow, Galvanized	2.10	2.40	3.50	4.00	5.50	9.40	13.50	18.00	27.00	40.00
Reducing Elbow, Plain	1.20	1.40	2.00	2.30	3.15	5.40	7.75	10.50	15.50	23.00
Reducing Elbow, Galvanized	2.40	2.80	4.00	4.60	6.30	10.80	15.50	21.00	31.00	46.00
45° Elbow, Plain	1.25	1.45	2.20	2.50	3.45	5.90	8.50	11.25	17.00	25.00
45° Elbow, Galvanized	2.50	2.90	4.40	5.00	6.90	11.80	17.00	22 50	34.00	50.00



TEE.



TEE REDUCING ON RUN.



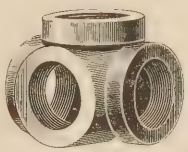
TEE REDUCING ON BRANCH.

Sizes	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Tee, Plain	.08	.08	.09	.12	.15	.23	.29	.41	.73	1.10
Tee, Galvanized	.16	.16	.18	.24	.30	.46	.58	.82	1.46	2.20
Reducing Tee, Plain	--	.09	.10	.14	.17	.27	.33	.47	.83	1.25
Reducing Tee, Galvanized	--	.18	.20	.28	.34	.54	.66	.94	1.66	2.50

Sizes	3½	4	4½	5	6	7	8	9	10	12
Tee, Plain	1.50	1.75	2.55	3.00	4.00	6.80	9.75	13.00	19.50	29.00
Tee, Galvanized	3.00	3.50	5.10	6.00	8.00	13.60	19.50	26.00	39.00	58.00
Reducing Tee, Plain	1.75	2.00	2.95	3.50	4.60	7.80	11.25	15.00	22.50	33.50
Reducing Tee, Galvanized	3.50	4.00	5.90	7.00	9.20	15.60	22.50	30.00	45.00	67.00

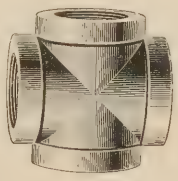


SIDE OUTLET ELBOW.

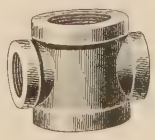


SIDE OUTLET TEE.

Sizes	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Side Outlet Elbow, Plain	.18	.24	.30	.48	.60	.84	1.50	2.25	3.15	3.60	5.25	6.00	8.25
Side Outlet Elbow, Galvanized	.36	.48	.60	.96	1.20	1.68	3.00	4.50	6.30	7.20	10.50	12.00	16.50
Side Outlet Tee, Plain	.27	.36	.45	.70	.90	1.25	2.25	3.25	4.50	5.25	7.65	9.00	12.00
Side Outlet Tee, Galvanized	.54	.72	.90	1.40	1.80	2.50	4.50	6.50	9.00	10.50	15.30	18.00	24.00



CROSS.



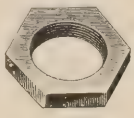
REDUCING CROSS.

Sizes	⅜	½	¾	1	1¼	1½	2	2½	3	3½
Cross, Plain	.15	.16	.22	.27	.42	.53	.75	1.30	2.00	2.70
Cross, Galvanized	.30	.32	.44	.54	.84	1.06	1.50	2.60	4.00	5.40
Reducing Cross, Plain	--	.18	.25	.30	.46	.60	.83	1.45	2.20	3.00
Reducing Cross, Galvanized	--	.36	.50	.60	.92	1.20	1.66	2.90	4.40	6.00

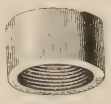
Sizes	4	4½	5	6	7	8	9	10	12
Cross, Plain	3.15	4.60	5.50	7.25	12.25	17.50	23.50	35.00	52.50
Cross, Galvanized	6.30	9.20	11.00	14.50	24.50	35.00	47.00	70.00	105.00
Reducing Cross, Plain	3.50	5.10	6.00	8.00	13.50	19.25	26.00	38.50	58.00
Reducing Cross, Galvanized	7.00	10.20	12.00	16.00	27.00	38.50	52.00	77.00	116.00

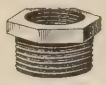
Cast Iron Fittings.


SQUARE HEAD PLUG.


LOCKNUT.


COUNTER SUNK PLUG.

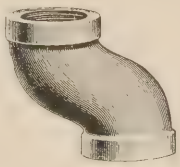

CAP.

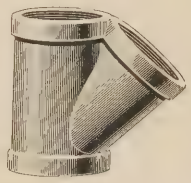

BUSHING.


FACED BUSHING.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Square Head Plug, Plain	.02	.02	.02	.03	.04	.05	.07	.10	.18	.25
" " " Galvanized	.04	.04	.04	.06	.08	.10	.14	.20	.36	.50
Bushing, Plain	.04	.04	.04	.05	.06	.07	.09	.14	.21	.30
" Galvanized	.08	.08	.08	.10	.12	.14	.18	.28	.42	.60
Locknut, Plain	.04	.04	.06	.07	.08	.10	.12	.25	.27	.34
" " Galvanized	.08	.08	.12	.14	.16	.20	.24	.50	.54	.68
Cap, Plain	.03	.03	.05	.08	.11	.16	.22	.26	.40	.54
" Galvanized	.06	.06	.10	.16	.22	.32	.44	.52	.80	1.08
Faced Bushing	....	.08	.09	.11	.13	.17	.22	.32	.48	.70
Size	3½	4	4½	5	6	7	8	9	10	12
Square Head Plug, Plain	.38	.42	.65	.88	1.20	1.85	2.75	3.25	3.75	5.00
" " " Galvanized	.76	.84	1.30	1.75	2.40	3.70	5.50	6.50	7.50	10.00
Bushing, Plain	.40	.50	.75	.93	1.25	1.87	2.75	3.25	3.75	5.00
" Galvanized	.80	1.00	1.50	1.85	2.50	3.75	5.50	6.50	7.50	10.00
Locknut, Plain	.47	.64	.85	.90	1.30	1.70	2.35	2.70	3.00	4.00
" " Galvanized	.94	1.28	1.70	1.80	2.60	3.40	4.70	5.40	6.00	8.00
Cap, Plain	.75	.87	1.05	1.20	1.55	2.50	2.85	4.75	5.50	7.00
" Galvanized	1.50	1.74	2.10	2.40	3.10	5.00	5.70	9.50	11.00	14.00
Faced Bushing	1.20	1.50	....	....	....	....	....	....	....	....

Size	½	¾	1	1¼	1½	2
Counter Sunk Plug	.04	.06	.08	.09	.11	.15
Plugs Tapped for Air Cock	..	.12	.15	.20	.25	.30
Left Hand Plugs	..	.06	.08	.09	.11	.15
Solid Plugs, not illustrated	.04	.06	.08	.09	.11	.15


OFFSET.


Y BRANCH.

Offset.

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6
To Offset, 4 inches, Plain	.45	.70	1.00	1.20	1.80	3.00	4.00	5.00	6.00	8.00	10.00
" " 4 " Galvanized	.90	1.40	2.00	2.40	3.60	6.00	8.00	10.00	12.00	16.00	20.00
" " 6 " Plain	.67	1.05	1.50	1.80	2.70	4.50	6.00	7.50	9.00	12.00	15.00
" " 6 " Galvanized	1.34	2.10	3.00	3.60	5.40	9.00	12.00	15.00	18.00	24.00	30.00
" " 8 " Plain	.90	1.40	2.00	2.40	3.60	6.00	8.00	10.00	12.00	16.00	20.00
" " 8 " Galvanized	1.80	2.80	4.00	4.80	7.20	12.00	16.00	20.00	24.00	32.00	40.00

Y Branches.

Size	½	¾	1	1¼	1½	2	2½	3	3½
Y Plain	.20	.28	.34	.54	.66	.94	1.66	2.50	3.50
Y Reducing Plain	.23	.33	.40	.62	.76	1.08	1.90	2.90	4.00
Y Galvanized	.40	.56	.68	1.08	1.32	1.88	3.32	5.00	7.00
Y Reducing Galvanized	.46	.66	.80	1.24	1.52	2.16	3.80	5.80	8.00
Size	4	4½	5	6	7	8	9	10	12
Y Plain	4.00	5.90	7.00	9.20	15.60	22.50	33.75	45.00	67.00
Y Reducing Plain	4.60	6.80	8.00	10.60	18.00	26.00	39.00	51.75	77.00
Y Galvanized	8.00	11.80	14.00	18.40	31.20	45.00	67.50	90.00	134.00
Y Reducing Galvanized	9.20	13.60	16.00	21.20	36.00	52.00	78.00	103.50	154.00


REDUCING COUPLING.


ECCENTRIC REDUCER.

Reducing Couplings.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Reducing Coupling, Plain	.04	.06	.09	.12	.18	.25	.36	.43	.60	.80
" " Galvanized	.08	.12	.18	.24	.36	.50	.72	.86	1.20	1.60
Size	3½	4	4½	5	6	7	8	9	10	12
Reducing Coupling, Plain	1.00	1.35	1.85	2.00	2.70	5.35	6.75	8.35	10.00	15.00
" " Galvanized	2.00	2.70	3.70	4.00	5.40	10.70	13.50	16.70	20.00	30.00

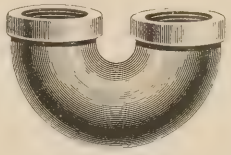
Eccentric Reducer.

Size	2x1½	2½x1¼	2½x1½	2½x2	3x2	3x2½	3½x3	3½x2½	4x3½	4x3	5x4	6x4
Each	1.00	1.50	1.50	1.50	2.40	2.40	3.00	3.00	4.00	4.00	6.00	8.00

Cast Iron Fittings.



BEND.
Close Pattern.



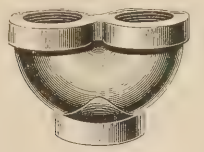
RETURN BEND.
Open Pattern.

Return Bends—Close Pattern.

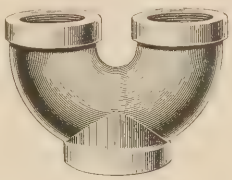
Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Plain	.18	.20	.22	.28	.40	.57	1.20	1.70	4.00	5.00	7.00	10.75	13.50
Galvanized	.36	.40	.44	.56	.80	1.14	2.40	3.40	8.00	10.00	14.00	21.50	27.00
Right and Left	.21	.23	.26	.33	.46	.66	1.40	1.95	4.15	5.25	----	----	----
With Pitch	----	.23	.26	.38	----	----	----	----	----	----	----	----	----
Center to Center	1½	1½	1¾	2¼	2¾	3¼	3½	4⅜	4¾	6	----	----	----

Return Bends—Open Pattern.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Plain	.25	.26	.30	.40	.55	.80	1.35	2.20	4.50	5.75	7.00	11.00	13.50
Galvanized	.50	.52	.60	.80	1.10	1.60	2.70	4.40	9.00	11.50	14.00	22 00	27.00
Right and Left	.30	.30	.35	.46	.64	.92	1.55	2.50	4.60	6.00	----	----	----
Center to Center	1¾	2⅛	2½	3	3½	4½	5	6½	6½	7	8	9	10



RETURN BEND.
Back Outlet, Close Pattern.



RETURN BEND.
Back Outlet, Open Pattern.

Return Bends—Back Outlet—Close Pattern.

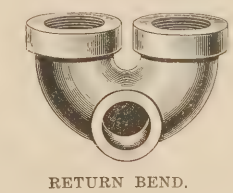
Size	¾	1	1¼	1½	2	2½	3
Plain	.38	.42	.60	.80	1.15	2.00	3.00
Galvanized	.76	.84	1.20	1.60	2.30	4.00	6.00
Right and Left	.42	.48	.70	.95	1.30	2.30	3.50
Center to Center	1½	1¾	2¼	2½	3¼	3⅝	4⅜

Return Bends—Back Outlet—Open Pattern.

Size	¾	1	1¼	1½	2	2½	3
Plain	.38	.42	.60	.80	1.15	2.00	3.00
Galvanized	.76	.84	1.20	1.60	2.30	4.00	6.00
Right and Left	.42	.48	.70	.95	1.30	2.30	3.50
Center to Center	2⅛	2½	3	3½	4½	5	6½



RETURN BEND.
Side Outlet, Close Pattern.

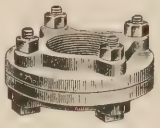


RETURN BEND.
Side Outlet, Open Pattern.

Return Bends—Side Outlet—Close and Open.

Size	¾	1	1¼	1½	2	2½	3
Close or Open, Plain	.42	.48	.65	.90	1.40	2.25	3.50
" " " Galvanized	.84	.96	1.30	1.80	2.80	4.50	7.00
R. and L., Close or Open	.46	.54	.75	1.05	1.55	2.55	4.00
Center to Center, Close	1½	1¾	2¼	2½	3¼	3⅝	4⅜
" " " Open	2¼	2½	3	3½	4	5⅜	6½

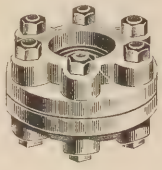
Cast Iron Fittings.



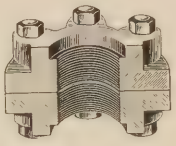
STANDARD UNION.

Standard Flange Union.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Dia. Flanges	3	3 1/4	3 5/8	4 1/4	4 5/8	5 1/4	5 7/8	6 3/4	7 1/4	8	8 3/4	9 1/2	10 3/4	12 1/2	14	15	17	19
No. Bolts	4	4	4	4	4	4	4	4	4	5	5	5	6	6	8	8	10	12
Plain	.40	.46	.52	.64	.78	1.00	1.25	1.50	1.80	2.10	2.70	3.15	3.95	5.50	7.00	10.00	11.50	16.00
Galvanized	.80	.92	1.04	1.28	1.56	2.00	2.50	3.00	3.60	4.20	5.40	6.30	7.90	11.00	14.00	20.00	23.00	32.00



EXTRA HEAVY UNION.



SECTION—EXTRA HEAVY UNION.

Extra Heavy Flange Unions.

Size	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	7	8	10
Diameter Flanges	5	6 1/4	6 1/2	7 3/4	8 1/4	8 3/8	9 1/4	10 1/4	11 3/4	13	14 1/4	17 1/4
No. of Bolts	5	5	5	6	6	6	8	8	8	10	12	12
Each	2.30	3.20	3.50	4.40	6.20	7.60	8.80	9.90	11.60	21.00	28.00	35.00



DART FLANGE UNION.

The Dart Patent Flange Unions.

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	7	8	9	10
Each	.80	1.20	1.60	2.00	3.20	4.80	6.00	7.50	10.00	12.50	15.00	18.00	21.60	28.80

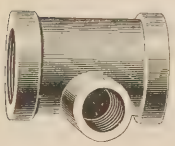


Fig. 7.
ECCENTRIC TEE.

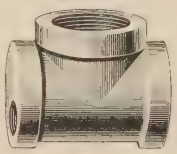
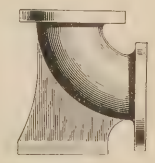


Fig 8.
ECCENTRIC TEE.



BASE FITTING.

Eccentric Tees.

These Fittings are designed to prevent the accumulation of water from condensation. Orders must be accompanied with sketch, showing position in which the Fitting is to be placed. Prices on application.

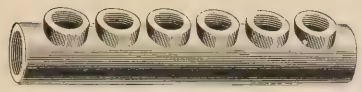
Base Fittings.

We make the above style of Fittings in all sizes, both screwed and flanged. They will be found very convenient where it is necessary to support a long vertical line of pipe on a pier of masonry or other foundation.

Prices on application.

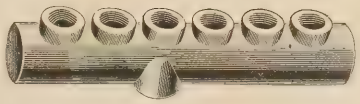
Branch Tees.

Ends Open.



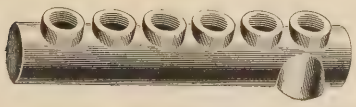
Style A.

Ends Closed.



Style B.

Ends Closed.



Style C.

Ends Closed.



Style D.

1¾ Inside Diameter, 2½ Center to Center, for ¾-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 1 or 1¼-inch Run	.70	.80	.95	1.10	1.35	2.05	2.35	2.55	2.85	3.75

1¾ Inside Diameter, 2½ Center to Center, for 1-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 1 or 1¼-inch Run	.90	1.05	1.15	1.35	1.60	1.90	2.20	2.65	3.15	4.40

2½ Inside Diameter, 2½ Center to Center, for 1-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 1½-inch Run	1.00	1.15	1.30	1.45	1.75	2.20	2.45	2.90	3.30	4.75

2⅞ Inside Diameter, 2½ Center to Center, for 1-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 2-inch Run	1.15	1.35	1.60	1.85	2.10	2.45	2.75	3.40	4.00	5.10
With 2½-inch Run	1.75	2.05	2.40	2.75	3.10	3.50	3.75	4.30	5.00	5.85

2⅞ Inside Diameter, 3 Center to Center, for 1¼-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 1¼ or 1½-inch Run	1.30	1.65	2.00	2.40	2.80	3.20	3.60	4.30	4.80	5.25

2⅞ Inside Diameter, 3 Center to Center, for 1¼-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 2-inch Run	1.50	1.90	2.40	2.90	3.30	3.90	4.50	5.25	5.85	6.50

3 Inside Diameter, 3 Center to Center, for 1¼-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 2½-inch Run	1.95	2.40	2.85	3.55	3.95	4.20	4.95	6.15	6.85	7.65

3½ Center to Center, for 1½-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 1½ or 2-inch Run	2.10	2.70	3.35	4.00	4.65	5.25	5.85	6.50	7.60	8.50
With 2½-inch Run	2.85	3.45	4.15	5.00	5.75	6.50	7.00	8.25	9.25	10.50

4 Center to Center, for 2-inch Pipe.

No. Branches	2	3	4	5	6	7	8	9	10	12
With 2-inch Run	4.10	5.25	6.40	7.65	8.80	10.60	11.50	12.25	13.50	15.00
With 2½-inch Run	4.50	5.75	7.00	8.50	9.75	11.75	12.75	13.50	15.00	16.50

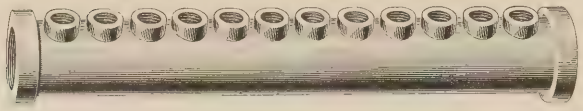
All above prices are for Style A Tees.

Back or Side Outlets, as shown by Styles B, C and D, are charged as additional Front Outlets. When not otherwise ordered, all openings are tapped right hand.

Back or Side Outlets larger than the size of run will add 50 per cent. to above prices.

Large Manifolds or Branch Tees.

For Dry Kilns or Heating Apparatus.



Branches, 1 inch—Center to Center, 2½ inch.

No. of Branches	6	7	8	9	10	12	13
3 inch Run	4.85	5.50	6.20	7.85	8.40	9.70	10.35
4 " "	6.25	7.50	8.50	9.60	10.50	12.50	13.25
5 " "	7.80	9.40	10.50	12.50	13.50	15.50	16.50
6 " "	9.75	11.75	13.00	15.50	16.75	19.50	20.50

No. of Branches	14	15	16	18	20	22	24
3 inch Run	11.00	11.75	12.50	15.75	17.00	18.50	21.00
4 " "	14.50	15.50	16.50	18.50	20.50	23.00	25.00
5 " "	18.00	19.25	20.50	23.00	25.50	28.50	31.50
6 " "	22.50	24.00	25.50	28.75	31.85	35.50	39.00

Branches, 1¼ inch—Center to Center, 3 inch.

No. of Branches	6	7	8	9	10	12	13
3 inch Run	5.40	6.25	7.10	8.25	9.20	10.85	11.65
4 " "	6.75	7.80	9.00	10.50	11.50	13.50	14.50
5 " "	8.50	9.75	11.25	13.25	14.50	17.00	18.25
6 " "	10.60	12.20	14.00	16.50	18.00	21.25	22.75

No. of Branches	14	15	16	18	20	22	24
3 inch Run	12.50	13.40	14.25	16.75	18.50	20.25	22.50
4 " "	15.50	16.75	17.80	21.00	23.00	25.00	27.00
5 " "	19.50	21.50	22.25	26.25	28.75	31.25	33.75
6 " "	24.35	26.75	27.75	32.75	36.00	39.00	42.00

Branches, 1½ inch—Center to Center, 3½ inch.

No. of Branches	6	7	8	9	10	12	13
3 inch Run	6.25	7.25	7.75	9.00	10.00	11.50	12.75
4 " "	7.75	8.80	10.50	11.50	12.75	15.50	16.50
5 " "	9.70	11.00	13.00	14.35	16.00	19.35	20.50
6 " "	12.15	13.75	16.25	18.00	20.00	24.25	25.50

No. of Branches	14	15	16	18	20	22	24
3 inch Run	14.00	15.50	16.00	18.25	20.50	22.00	24.00
4 " "	17.50	19.00	20.25	22.75	25.00	27.50	30.00
5 " "	21.85	23.75	25.25	28.25	31.25	34.35	37.50
6 " "	27.25	29.75	31.50	35.30	39.00	43.00	47.00

Branches, 2 inch—Center to Center, 4½ inch.

No. of Branches	6	7	8	9	10	12	13
3 inch Run	9.75	11.75	12.75	13.50	15.00	16.50	17.50
4 " "	11.25	13.00	15.00	16.50	17.60	20.50	22.25
5 " "	14.00	16.25	18.75	20.60	22.00	25.50	27.80
6 " "	17.50	20.25	23.40	25.75	27.50	31.80	34.75

No. of Branches	14	15	16	18	20	22	24
3 inch Run	19.00	20.50	22.00	25.00	28.00	30.00	32.00
4 " "	24.00	25 50	27.50	31.25	35.00	37.50	40.00
5 " "	30.00	32.00	34.30	39.00	43.00	46.75	50.00
6 " "	37.50	40.00	43.00	48.75	53.75	58.00	62.00

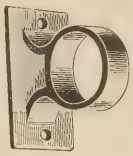
These Manifolds are a Special Pattern and are made only to order.

Hook, Ring and Saddle Plates.


SHORT SHANK HOOK.


EXPANSION HOOK.


RING PLATE.


PROJECTING RING PLATE.


BEAM HOOK.

Hook and Ring Plates.

Size Pipe	½	¾	1	1¼	1½	2	2½	3
Short Shank Hooks	----	.08	.09	.10	.15	.22	.35	----
Expansion Hooks	----	.12	.15	.17	.25	.32	.45	----
Ring Plate	----	.16	.16	.21	.31	----	----	----
Projecting Ring Plates	.19	.19	.21	.26	.36	.52	----	----
Beam Hooks	.13	.15	.18	.22	.24	.35	.65	.90


HOOK PLATE.


OFFSET HOOK PLATE.


EXPANSION PLATE.


RING PLATE.

Hook Plates.

No. Hooks	2	3	4	5	6	7	8	9	10	12
For ¾ Pipe, 2½ Center to Center	.16	.21	.24	.28	.34	.40	.45	.50	.56	.72
" 1 " 2½ " "	.18	.23	.26	.32	.38	.48	.59	.65	.70	1.00
" 1¼ " 3 " "	.21	.27	.32	.41	.52	.68	.80	.90	1.20	1.40
" 1½ " 3½ " "	.28	.43	.58	.72	.88	1.10	1.25	1.40	1.55	1.90
" 2 " 4½ " "	.43	.65	.90	1.15	1.35	----	----	----	----	----

Offset Hook Plates.

No. Hooks	2	3	4	5	6	7	8
For 1¼ Pipe, to Offset 1½ inches	.84	1.10	1.40	1.80	2.25	2.50	2.80
" 1¼ " " " 3 "	1.10	1.70	1.95	2.25	2.50	2.80	3.35
" 1¼ " " " 4 "	1.70	1.95	2.25	2.50	2.80	----	----

Expansion Plates.

No. Pipes	2	3	4	5	6	7	8	9	10	12
For ¾ Pipe, 2½ Center to Center	.23	.34	.45	.55	.65	.77	.90	1.05	1.25	1.65
" 1 " 2½ " "	.25	.35	.50	.60	.70	.80	.95	1.10	1.35	1.70
" 1¼ " 3 " "	.27	.40	.60	.70	.80	.90	1.15	1.30	1.50	2.00
" 1½ " 3½ " "	.40	.60	.75	.90	1.00	----	----	----	----	----
" 2 " 4½ " "	.60	.85	1.00	1.35	1.55	2.00	2.45	----	----	----

Ring Plates.

No. Pipes	2	3	4	5	6	7	8	9	10
For 1 Pipe, 2½ Center to Center	.28	.41	.50	.62	.72	.96	1.00	1.20	1.30
" 1¼ " 3 " "	.35	.50	.62	.75	1.10	1.25	1.40	----	----



Pipe Saddle.

No. Pipes	3	4	5	6	7	8	9	10
1 inch, each	.60	.65	.70	.90	1.00	1.40	1.60	1.75
1¼ inch, "	.65	.75	.85	1.10	1.40	1.65	1.80	2.00

Roll Hangers, Rings, Stands and Hooks.



HANGER ROLLS.
2 inches and smaller.



HANGER ROLL.
2½ inches and larger.



MALLEABLE PIPE RING.

Hanger Rolls.

2 INCHES AND SMALLER.

No. of Pipes	1	2	3	4	5	6
For 1 inch Pipe, 2½ inches Center to Center, each	.06	.12	.18	.24	.30	.36
" 1¼ " 3 " "	.07	.14	.21	.28	.35	.42
" 1½ " 3 " "	.08	.16	.24	.32	.40	.48
" 2 " 3¼ " "	.13	.26	.39	.52	.65	.78

Above prices for Rolls only, without rods, bolts or flanges.

Special flanges tapped for $\frac{9}{16}$ rods and drilled for screws, each ..... .10

Hanger Rolls.

2½ INCHES AND LARGER.

Size	2½	3	3½	4	4½	5	6	7	8	10	12	14
Length End to End	4¾	4¾	5½	5½	6	6	7¾	8	9	11½	14	17½
Weight	2	2	3½	3½	4	4	4½	6	7¼	12	17¼	22
Each	.15	.18	.21	.21	.24	.24	.27	.36	.44	.72	1.05	1.32

Malleable Pipe Rings.

Size	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Weight per 100	9¼	15¾	18	28	35	39	49½	71	84½	91	100	----	----	----
Each	.02	.03	.03	.04	.05	.06	.08	.12	.15	.20	.25	.40	.50	.60

7 and 8 inch wrought iron.



COIL STANDS.

Coil Stands.

FOR 1-INCH PIPE.

No. of Pipes	4	6	8	10	12
Weight per Pair	5	7	9	10	16½
Per Pair	.30	.42	.54	.60	1.00

Pipe Hooks—Wrought Iron.



WROUGHT IRON PIPE HOOK.

Standard Wrought Pipe Hooks.

Size	¼	⅜	½	¾	1	1¼	1½	2
Price, per Thousand	5.25	6.25	7.15	9.10	11.70	14.30	18.20	23.40
" " Hundred	.60	.65	.75	1.00	1.25	1.50	2.00	2.50
" Each	.01	.01	.01	.01½	.01½	.02	.02½	.03

Wrought Pipe Hooks—Extra Heavy.

Size	⅜	½	¾	1	1¼	1½	2
Price, per Thousand	10.40	11.00	12.00	15.60	19.50	23.40	31.20
" " Hundred	1.25	1.35	1.50	1.75	2.10	2.50	3.50
" Each	.02	.02	.02½	.03	03	.03½	.04

Pipe Hangers.



No. 3.



No. 4.



No. 9.

Blake Pipe Hangers.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	9	10	12	14
No. 3, complete	.55	.58	.58	.60	.62	.65	.70	.75	.90	1.00	1.10	1.30	1.60	1.80	2.00	2.20	2.60	2.90
No. 4, "	.15	.18	.18	.20	.22	.25	.30	.35	.50	.60	.70	.90	1.20	1.40	1.60	1.80	2.20	2.50
No. 9, "	.65	.68	.68	.70	.72	.75	.80	.85	1.00	1.10	1.20	1.40	1.70	1.90	2.10	2.30	2.70	3.00

Parts of Blake Pipe Hangers.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	10	12	14
Ring	.05	.08	.08	.10	.12	.14	.20	.25	.30	.40	.50	.65	.90	1.10	1.50	1.90	2.20
Size of Socket and Lag	⅛	⅛	⅛	¼	¼	¼	¼	¼	⅜	⅜	⅜	½	½	½	½	½	½
Socket	.05	.05	.05	.05	.05	.05	.05	.05	.08	.08	.08	.10	.10	.10	.10	.10	.10
Bolt	.03	.03	.03	.03	.03	.03	.03	.03	.03	.05	.05	.05	.05	.05	.05	.05	.05
Beam Clamp, including Bolt	--	--	--	-	--	--	.40	.40	.40	.40	.40	.40	.40	--	--	--	--

Williams' Adjustable Beam Clamp, each ..... .50

Universal Pipe Hanger.



NO. 1. CLOSED.



NO. 1. OPEN.



NO. 2.

Universal Pipe Hangers.

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	10	12	14
No. 1	.18	.18	.20	.22	.25	.30	.35	.45	.50	.60	.75	1.15	1.25	1.50	1.75	2.00
No. 2	.58	.58	.60	.62	.65	.70	.75	.85	.90	1.00	1.15	1.55	1.65	1.90	2.15	2.40

In ordering No. 2 Clamp Hangers, state size of iron beam.

Malleable Iron Beam Clamps, 2 to 7 inch, each ..... .40



SOLID HANGER.

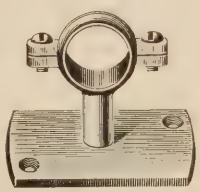


FIG 11. SPLIT HANGER.



FIG. 14. SPLIT HANGER.

Solid Hangers.

Per 100.

Size	⅜	½	¾	1	1¼	1½	2
Plain Iron	5.00	5.00	5.80	6.75	7.50	10.00	14.00
Galvanized Iron	6.50	6.50	7.00	8.00	9.00	12.00	16.00

Fig. 11. Split Hangers.

Per 100.

Size	⅜	½	¾	1	1¼	1½	2
Galvanized Iron	$17	17	20	25	30	40	50

Fig. 14. Split Hangers.

Size	½	¾	1	1¼	1½	2
Polished Brass, each	.90	1.00	1.15	1.30	1.50	1.70
Nickel Plated "	1.00	1.10	1.25	1.40	1.60	1.80
Galvd. Iron, "	.25	.30	.35	.40	.50	.60
" without Nip., each	.20	.25	.30	.35	.45	.55

Nason Floor and Ceiling Plates.

Floor and Ceiling Plates—Cast Iron.

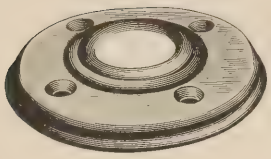


Fig. 1.

Size	½	¾	1	1¼	1½	2
Floor Plates, each	.06	.06	.08	.11	.14	.16
Ceiling Plates, each	.11	.13	.16	.18	.23	.27

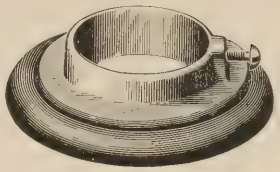


Fig. 2.

Adjustable Floor and Ceiling Plates—Cast Iron.

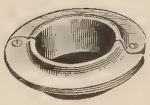


Fig. 3.

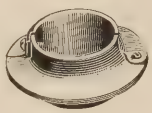


Fig. 4.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Floor and Ceiling Plates, Black, each	.14	.14	.18	.20	.24	.28	.43	.60	.90	1.25	1.60	2.00
Floor and Ceiling Plates, Nickel, "	.25	.25	.28	.32	.35	.38	.52	.75	1.10	1.50	2.00	2.50

Adjustable Floor and Ceiling Plates—Spring Brass and Steel.

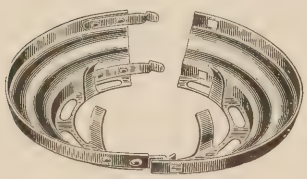


Fig. 5.

Spring Brass Nickel Plated, With Vents.

Easily adjusted to the pipe and will stay in position. Will hold the nickel finish and always look well. Handsome in design and heavy in weight and finish.

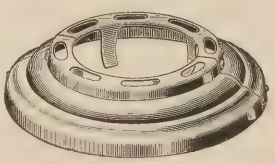


Fig. 6.

Size	⅜	½	¾	1	1¼	1½	2	2½	3
Nickel Brass, each	.25	.25	.25	.28	.32	.35	.38	.52	.75

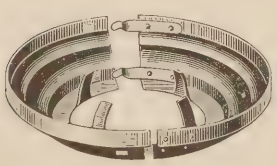


Fig. 7.

Spring Brass Nickel Plated, Without Vents.

Size	⅜	½	¾	1	1¼	1½	2	2½	3
Nickel Brass, each	.25	.25	.25	.28	.32	.35	.38	.52	.75

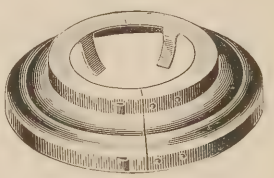


Fig. 8.



Fig. 9.

Cold Rolled Steel.

Size	½	¾	1	1¼	1½	2
Polished Steel, each	.12	.12	.15	.18	.20	.24
Steel Nickel Plated, each	.25	.25	.28	.32	.35	.38

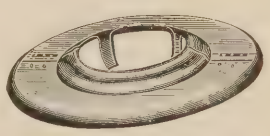


Fig. 10.

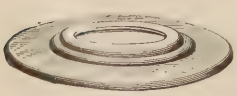


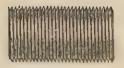
Fig. 11.

Solid Cold Rolled Steel Plate.

Size	½	¾	1	1¼	1½	2	2½	3
Per Dozen	.72	.72	.96	1.32	1.68	1.92	2.88	3.60

Order by figure number and size.

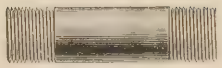
Wrought Iron Nipples.



CLOSE NIPPLE.



SHORT NIPPLE.



LONG NIPPLE.

Wrought Iron Nipples—Threaded Right Hand.

Length in Inches. Close.	Short.	Long.	Sizes.	Prices. Close or Short.	Long.	Prices of Extra Long Nipples.—Lengths in Inches. 4	5	6	7	8	9	10	11	12
3/4	1 1/2	2, 2 1/2, 3, 3 1/2	1/8	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
7/8	1 1/2	2, 2 1/2, 3, 3 1/2	1/4	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1	1 1/2	2, 2 1/2, 3, 3 1/2	3/8	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1 1/8	1 1/2	2, 2 1/2, 3, 3 1/2	1/2	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23
1 3/8	2	2 1/2, 3, 3 1/2, 4	3/4	.06	.09	--	.11	.13	.17	.18	.20	.22	.24	.26
1 1/2	2	2 1/2, 3, 3 1/2, 4	1	.08	.13	--	.15	.18	.23	.25	.28	.31	.34	.36
1 5/8	2 1/2	3, 3 1/2, 4, 4 1/2	1 1/4	.11	.17	--	.20	.24	.29	.33	.36	.40	.44	.47
1 3/4	2 1/2	3, 3 1/2, 4, 4 1/2	1 1/2	.13	.20	--	.25	.29	.36	.40	.45	.50	.54	.59
2	2 1/2	3, 3 1/2, 4, 4 1/2	2	.18	.27	--	.32	.38	.50	.54	.59	.65	.72	.77
2 1/2	3	3 1/2, 4, 4 1/2, 5	2 1/2	.39	.59	--	--	.68	.90	.97	1.06	1.17	1.26	1.35
2 1/2	3	3 1/2, 4, 4 1/2, 5	3	.48	.72	--	--	.85	1.08	1.20	1.33	1.45	1.58	1.70
2 3/4	4	4 1/2, 5, 5 1/2, 6	3 1/2	.75	1.05	--	--	--	1.30	1.45	1.60	1.75	1.90	2.05
3	4	4 1/2, 5, 5 1/2, 6	4	.85	1.20	--	--	--	1.52	1.69	1.87	2.05	2.22	2.40
3	4	4 1/2, 5, 5 1/2, 6	4 1/2	1.25	1.70	--	--	--	2.25	2.50	2.75	2.95	3.17	3.40
3 1/2	4 1/2	5, 5 1/2, 6, 6 1/2	5	1.55	2.45	--	--	--	2.58	2.83	3.10	3.35	3.60	3.85
3 1/2	4 1/2	5, 5 1/2, 6, 6 1/2	6	1.85	2.90	--	--	--	3.05	3.35	3.70	4.00	4.30	4.65
4	5	6	7	3.20	3.60	--	--	--	4.05	4.45	4.90	5.30	5.75	6.15
4	5	6	8	3.55	4.05	--	--	--	4.55	5.05	5.50	6.00	6.50	7.00
5	6	8	9	5.25	6.50	--	--	--	--	--	7.10	7.75	8.40	9.00
5	6	8	10	6.75	8.25	--	--	--	--	--	8.90	9.70	10.40	11.15
5	6	8	12	8.00	10.00	--	--	--	--	--	10.80	11.75	12.70	13.65

Wrought Iron Nipples—Threaded Right and Left.

Length in Inches. Close.	Short.	Long.	Sizes.	Prices. Close or Short.	Long.	Prices of Extra Long Right and Left Nipples.—Lengths in Inches. 4	5	6	7	8	9	10	11	12
3/4	1 1/2	2, 2 1/2, 3, 3 1/2	1/8	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27
7/8	1 1/2	2, 2 1/2, 3, 3 1/2	1/4	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27
1	1 1/2	2, 2 1/2, 3, 3 1/2	3/8	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27
1 1/8	1 1/2	2, 2 1/2, 3, 3 1/2	1/2	.07	.10	.11	.13	.16	.18	.21	.24	.27	.29	.31
1 3/8	2	2 1/2, 3, 3 1/2, 4	3/4	.08	.12	--	.15	.17	.23	.25	.27	.29	.32	.35
1 1/2	2	2 1/2, 3, 3 1/2, 4	1	.11	.18	--	.20	.24	.31	.33	.37	.41	.45	.48
1 5/8	2 1/2	3, 3 1/2, 4, 4 1/2	1 1/4	.15	.23	--	.27	.32	.39	.45	.50	.55	.60	.65
1 3/4	2 1/2	3, 3 1/2, 4, 4 1/2	1 1/2	.18	.27	--	.34	.39	.48	.52	.60	.67	.72	.80
2	2 1/2	3, 3 1/2, 4, 4 1/2	2	.24	.36	--	.43	.51	.67	.72	.80	.87	.96	1.03
2 1/2	3	3 1/2, 4, 4 1/2, 5	2 1/2	.52	.79	--	--	.91	1.20	1.30	1.40	1.55	1.68	1.80
2 1/2	3	3 1/2, 4, 4 1/2, 5	3	.65	.96	--	--	1.13	1.44	1.60	1.77	1.93	2.10	2.27
2 3/4	4	4 1/2, 5, 5 1/2, 6	3 1/2	1.00	1.40	--	--	--	1.75	1.95	2.15	2.35	2.55	2.75
3	4	4 1/2, 5, 5 1/2, 6	4	1.15	1.60	--	--	--	2.00	2.25	2.50	2.75	3.00	3.25

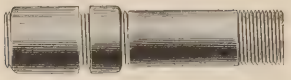
Add 60 per cent. to above prices for galvanized nipples threaded right and left.

Wrought Iron Galvanized Nipples—Threaded Right Hand.

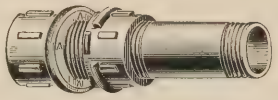
Length in Inches. Close.	Short.	Long.	Sizes.	Prices. Close or Short.	Long.	Prices of Extra Long Galvanized Nipples.—Lengths in Inches. 4	5	6	7	8	9	10	11	12
3/4	1 1/2	2, 2 1/2, 3, 3 1/2	1/8	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34
7/8	1 1/2	2, 2 1/2, 3, 3 1/2	1/4	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34
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1 1/8	1 1/2	2, 2 1/2, 3, 3 1/2	1/2	.06	.11	.13	.16	.18	.23	.26	.28	.31	.33	.36
1 3/8	2	2 1/2, 3, 3 1/2, 4	3/4	.08	.14	--	.18	.21	.26	.29	.32	.35	.38	.41
1 1/2	2	2 1/2, 3, 3 1/2, 4	1	.11	.19	--	.24	.28	.34	.38	.42	.47	.51	.55
1 5/8	2 1/2	3, 3 1/2, 4, 4 1/2	1 1/4	.17	.29	--	.32	.38	.45	.51	.57	.63	.69	.75
1 3/4	2 1/2	3, 3 1/2, 4, 4 1/2	1 1/2	.21	.35	--	.39	.46	.55	.63	.70	.77	.84	.91
2	2 1/2	3, 3 1/2, 4, 4 1/2	2	.27	.47	--	.52	.61	.74	.83	.93	1.03	1.13	1.23
2 1/2	3	3 1/2, 4, 4 1/2, 5	2 1/2	.56	.86	--	--	1.00	1.26	1.41	1.56	1.71	1.86	2.01
2 1/2	3	3 1/2, 4, 4 1/2, 5	3	.70	1.10	--	--	1.30	1.60	1.80	2.00	2.20	2.40	2.60
2 3/4	4	4 1/2, 5, 5 1/2, 6	3 1/2	1.20	1.70	--	--	--	2.10	2.35	2.60	2.85	3.15	3.40
3	4	4 1/2, 5, 5 1/2, 6	4	1.35	1.87	--	--	--	2.30	2.60	2.90	3.20	3.50	3.80
3	4	4 1/2, 5, 5 1/2, 6	4 1/2	1.85	2.60	--	--	--	3.30	3.65	4.05	4.45	4.85	5.25
3 1/2	4 1/2	5, 5 1/2, 6, 6 1/2	5	2.30	3.15	--	--	--	3.75	4.20	4.60	5.00	5.40	5.85
3 1/2	4 1/2	5, 5 1/2, 6, 6 1/2	6	2.80	4.25	--	--	--	4.50	5.00	5.55	6.05	6.60	7.15
4	5	6	7	4.25	4.95	--	--	--	5.65	6.35	7.05	7.75	8.45	9.20
4	5	6	8	5.00	5.80	--	--	--	6.65	7.50	8.35	9.25	10.10	10.95

Long Screws, Locknut Nipples and Extra Heavy Nipples.

Wrought Iron.



STANDARD LONG SCREW.



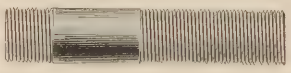
AMERICAN LONG SCREW.

Standard Long Screws.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Standard Lengths, inches	4½	5	5½	6	6½	7	7½	8	8½	9
Price, Black	.40	.55	.75	1.00	1.30	1.70	2.70	3.70	5.40	6.60
" Galvanized	.50	.66	1.00	1.25	1.60	2.10	3.10	4.70	5.50	6.75

American Long Screws.

Size	½	¾	1	1¼	1½	2	2½
Length, inches	3½	4	4½	5	5½	6	7
Plain, each	.45	.55	.75	1.00	1.50	2.00	3.37
Galvanized	.60	.75	1.00	1.35	2.00	2.70	4.50



STANDARD LOCKNUT NIPPLE.

Locknut Nipples—Plain.

Not Over 6 Inches Long.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each, Plain	.18	.20	.22	.25	.30	.40	.50	.80	1.25	1.50
" Galvanized	.36	.40	.44	.50	.60	.80	1.00	1.60	2.50	3.00

Extra Heavy Close or Short Nipples.

Lengths Same as Standard.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Each	.08	.08	.10	.12	.16	.22	.26	.36	.78	.96	1.50	1.70	2.50	3.10	3.70

Extra Heavy Long Nipples.

Lengths Same as Standard.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Each	.12	.12	.14	.18	.26	.34	.40	.54	1.18	1.44	2.10	2.40	3.40	4.90	5.80

Extra Heavy Extra Long Nipples.

Length / Pipe Size.	4	5	6	7	8	9	10	11	12
¼	.14	.16	.20	.24	.28	.30	.34	.36	.38
⅜	.14	.16	.20	.24	.28	.30	.34	.36	.38
½	.16	.20	.24	.28	.32	.36	.40	.44	.46
¾	----	.22	.26	.34	.36	.40	.44	.48	.52
1	----	.30	.36	.46	.50	.56	.62	.68	.72
1¼	----	.40	.48	.58	.66	.72	.80	.88	.94
1½	----	.50	.58	.72	.80	.90	1.00	1.08	1.18
2	----	.64	.76	1.00	1.08	1.18	1.30	1.44	1.54
2½	----	----	1.36	1.80	1.94	2.12	2.34	2.52	2.70
3	----	----	1.70	2.16	2.40	2.66	2.90	3.16	3.40
3½	----	----	----	2.60	2.90	3.20	3.50	3.80	4.10
4	----	----	----	3.04	3.38	3.74	4.10	4.44	4.80
4½	----	----	----	4.50	5.00	5.50	5.90	6.34	6.80
5	----	----	----	5.16	5.66	6.20	6.70	7.20	7.70
6	----	----	----	6.10	6.70	7.40	8.00	8.60	9.30
7	----	----	----	8.10	9.10	9.80	10.60	11.50	12.30
8	----	----	----	9.10	10.10	11.00	12.00	13.00	14.00

Schedule of Standard Flanges for Pressures up to 200 lbs.

Adopted August, 1894, by a Committee of the Master Steam and Hot Water Fitters' Association, a Committee of Mechanical Engineers of the U. S., and the leading Valve and Fitting Manufacturers of the U. S.

Comm. Am. Society of Mechanical Engineers.
CARLETON W. NASON, Chairman.
ANDREW J. CALDWELL, ALEXANDER H. JARECKI.
FRANK H. BALL.

Comm. Master Steam and Hot Water Fitters' Association of the United States.
EDWARD P. BATES, Chairman.
A. C. WALWORTH. CHAS. J. GILLIS.

NOTE—All given dimensions are in inches.

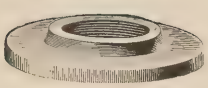
Pipe Size.	Pipe Thickness.	Pipe Thickness, nearest fraction.	Flange dia. Under 75 lbs.	Flange dia. Over 75 lbs.	Flange Thickness at Hub for Iron Pipe	Flange thickness. Under 75 lbs.	Flange thickness. Over 75 lbs.	Width of Face. Under 75 lbs.	Width of Face. Over 75 lbs.	Bolt Circle dia. Under 75 lbs.	Bolt Circle dia. Over 75 lbs.	Number of Bolts.	Bolt diameter. Under 75 lbs.	Bolt diameter. Over 75 lbs.	Bolt Length.
2	.409	7/16	6	6	1	5/8	5/8	2	2	4 3/4	4 3/4	4	1/2	5/8	2
2 1/2	.429	7/16	7	7	1 1/8	11/16	11/16	2 1/4	2 1/4	5 1/2	5 1/2	4	1/2	5/8	2 1/4
3	.448	7/16	7 1/2	7 1/2	1 1/4	3/4	3/4	2 1/4	2 1/4	6	6	4	1/2	5/8	2 1/2
3 1/2	.466	1/2	8 1/2	8 1/2	1 1/4	13/16	13/16	2 1/2	2 1/2	7	7	4	1/2	5/8	2 1/2
4	.486	1/2	9	9	1 3/8	15/16	15/16	2 1/2	2 1/2	7 1/2	7 1/2	4	5/8	3/4	2 3/4
4 1/2	.498	1/2	9 1/4	9 1/4	1 3/8	15/16	15/16	2 3/8	2 3/8	7 3/4	7 3/4	8	5/8	3/4	3
5	.525	1/2	10	10	1 1/2	15/16	15/16	2 1/2	2 1/2	8 1/2	8 1/2	8	5/8	3/4	3
6	.563	9/16	11	11	1 1/2	1	1	2 1/2	2 1/2	9 1/2	9 1/2	8	5/8	3/4	3
7	.60	5/8	12 1/2	12 1/2	1 1/2	1 1/16	1 1/16	2 3/4	2 3/4	10 3/4	10 3/4	8	5/8	3/4	3 1/4
8	.639	5/8	13 1/2	13 1/2	1 3/4	1 1/8	1 1/8	2 3/4	2 3/4	11 3/4	11 3/4	8	5/8	3/4	3 1/2
9	.678	11/16	15	15	1 3/4	1 1/8	1 1/8	3	3	13 1/4	13 1/4	12	5/8	3/4	3 1/2
10	.713	3/4	16	16	2	1 3/16	1 3/16	3	3	14 1/4	14 1/4	12	3/4	7/8	3 5/8
12	.79	13/16	19	19	2	1 1/4	1 1/4	3 1/2	3 1/2	17	17	12	3/4	7/8	3 3/4
14	.864	7/8	21	21	2	1 3/8	1 3/8	3 1/2	3 1/2	18 3/4	18 3/4	12	7/8	1	4 1/4
15	.904	15/16	22 1/4	22 1/4	2	1 3/8	1 3/8	3 5/8	3 5/8	20	20	16	7/8	1	4 1/4
16	.946	1	23 1/2	23 1/2	2 1/4	1 7/16	1 7/16	3 3/4	3 3/4	21 1/4	21 1/4	16	7/8	1	4 1/4
18	1.02	1 1/16	25	25	----	1 9/16	1 9/16	3 1/2	3 1/2	22 3/4	22 3/4	16	1	1 1/8	4 3/4
20	1.09	1 1/8	27 1/2	27 1/2	----	1 11/16	1 11/16	3 3/4	3 3/4	25	25	20	1	1 1/8	5
22	1.18	1 3/16	29 1/2	29 1/2	----	1 13/16	1 13/16	3 3/4	3 3/4	27 1/4	27 1/4	20	1	1 1/4	5 1/2
24	1.25	1 1/4	31 1/2	32	----	1 1/4	1 7/8	3 3/4	4	29 1/4	29 1/2	20	1	1 1/4	5 1/2
26	1.30	1 5/16	33 3/4	34 1/4	----	1 3/8	2	3 7/8	4 1/8	31 1/4	31 3/4	24	1	1 1/4	5 3/4
28	1.38	1 3/8	36	36 1/2	----	1 7/16	2 1/16	4	4 1/4	33 1/2	34	28	1	1 1/4	6
30	1.48	1 1/2	38	38 3/4	----	1 1/2	2 1/8	4	4 3/8	35 1/2	36	28	1 1/8	1 3/8	6 1/4
36	1.71	1 3/4	44 1/2	45 3/4	----	1 3/4	2 3/8	4 1/4	4 7/8	42	42 3/4	32	1 1/8	1 3/8	6 1/2
42	1.87	2	51	52 3/4	----	1 7/8	2 5/8	4 1/2	5 3/8	48 1/2	49 1/2	36	1 1/4	1 1/2	7 1/4
48	2.17	2 1/4	57 1/2	59 1/2	----	2	2 3/4	4 3/4	5 3/4	54 3/4	56	44	1 3/8	1 1/2	7 3/4

Committee of Manufacturers:

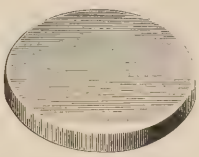
WALWORTH MANUFACTURING CO. JENKINS BROS. JARECKI MANUFACTURING CO.
EATON, COLE AND BURNHAM CO. CRANE CO. SNOW STEAM PUMP CO.
WORTHINGTON STEAM PUMP CO. R. D. WOOD & CO.
BALL AND WOOD ENGINE CO. CHAPMAN VALVE M'F'G CO.

Standard Cast Iron Flanges.

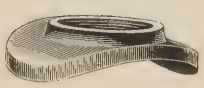
Not Faced or Drilled.



COMMON FLANGE.



SOLID FLANGE.



CURVED FLANGE.



OVAL FLANGE.

Size of Pipe. Diameter.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9	10	12	14	15	16
3	.10																				
3 1/2	.15	.15	.15	.16																	
4	.22	.22	.16	.16																	
4 1/2	.25	.25	.25	.25	.22																
5	.35	.30	.30	.30	.30	.35															
5 1/2	.45	.45	.40	.40	.40	.35	.40														
6	.50	.50	.42	.40	.40	.42	.42	.50													
6 1/2	.65	.60	.60	.60	.55	.50	.50	.50	.65												
7	.75	.75	.75	.70	.70	.62	.62	.62	.75												
7 1/2	.90	.90	.90	.85	.85	.80	.80	.75	.85	.90											
8	1.00	1.00	1.00	.95	.95	.90	.90	.90	.90	.90											
8 1/2	1.25	1.25	1.25	1.15	1.15	1.10	1.10	1.10	1.00	1.00											
9			1.35	1.35	1.35	1.30	1.25	1.15	1.15	1.15	1.15	1.40									
9 1/2			1.90	1.90	1.75	1.75	1.60	1.60	1.50	1.25	1.50	1.50									
10			2.25	2 25	2.15	2.00	1.80	1.50	1.50	1.50	1.50	1.50									
11					2.50	2.50	2.25	2 25	2.00	1.75	1.75	1.75	2.20								
12						3.00	3.00	2 75	2.50	2.50	2.20	2.20	2.20	2.80							
13							3.50	3.50	3.25	3.00	3.00	2.80	2.80	2.80							
14								4.00	4.00	3.75	3.75	3.50	3.25	3.25	3.25	3.75	4.00				
15														4.00	4.00	4.00	4.50				
16														5.00	5.00	5.00	5.00	6.00			
17														6.50	6.50	5.75	5.75	7.00			
18															8.00	8.00	7.00	7.00			
19																	7.50	7.50			
20																		8.50	8.50		
21																			9.50		
22 1/4																				25.00	
23 1/2																					28.00

Oval and Curved Flanges made to order at Special Prices. Galvanized Flanges at double the above Lists.

Standard, Solid and Eccentric Flanges.

Faced Only, or Faced and Drilled.

Pipe Size.	Outside Diameter. Inches.	Price, Common Flanges. Faced. Each.	Price, Common Flanges. Faced and Drilled. Each.	Table for Drilling. Bolt Circle. Inches.	Table for Drilling. Number of Bolts.	Table for Drilling. Size of Bolts.	Price, Eccentric Flanges. Faced. Each.	Price, Eccentric Flanges. Faced and Drilled. Each.	Price, Solid Flanges. Faced. Each.	Price, Solid Flanges. Faced and Drilled Each.
2	6	1.20	1.50	4 3/4	4	1/2			1.40	1.70
2 1/2	7	1.40	2.00	5 1/2	4	1/2			1.60	2.20
3	7 1/2	1.60	2.25	6	4	1/2	3.25	4.00	1.85	2.50
3 1/2	8 1/2	1.80	2.50	7	4	1/2	3.60	4.30	2.10	2.80
4	9	2.15	3.00	7 1/2	4	5/8	4.30	5.15	2.50	3.35
4 1/2	9 1/4	2.50	3 35	7 3/4	8	5/8	5.00	5.85	2.90	3.75
5	10	2.80	3.65	8 1/2	8	5/8	5.60	6.50	3.25	4.10
6	11	3.20	4.00	9 1/2	8	5/8	6.40	7.25	3.70	4.50
7	12 1/2	4.35	5.75	10 3/4	8	5/8	8.70	10.00	5.00	6.40
8	13 1/2	5.00	6.50	11 3/4	8	5/8	10.00	11.50	5.75	7.25
9	15	6.75	8.25	13 1/4	12	5/8	13.00	14.50	7.75	9.25
10	16	7.75	9.25	14 1/4	12	3/4	15.00	16.50	9.00	10.60
12	19	10.50	12.50	17	12	3/4	18.00	20.50	14.00	16.00
14	21	13.75	16.00	18 3/4	12	7/8	23.00	26.00	17.50	19.75
15	22 1/4	18.00	21.00	20	16	7/8	30.00	33.00	22.50	25.50
16	23 1/2	22.50	26.00	21 1/4	16	7/8	37.00	41.00	28.00	31.50
18	25	27.50	31.00	22 3/4	16	1	40.00	45.00	33.00	36.50
20	27 1/2	30.00	34.00	25	20	1	45.00	51.00	36.00	40.00
22	29 1/2	33.75	39.00	27 1/4	20	1	50.00	58.00	41.00	46.00
24	31 1/2	41.00	46.00	29 1/4	20	1	60.00	68.00	50.00	55.00

The above Flanges are furnished Faced only, unless otherwise ordered.

Extra Heavy Cast Iron Flanges.

Working Steam Pressure 250 lbs.



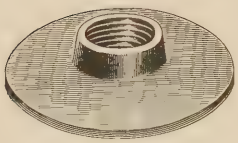
EXTRA HEAVY CAST IRON FLANGE.

Extra Heavy Cast Iron Flanges.

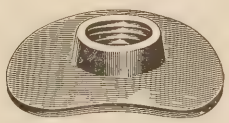
Pipe size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14 O.D.	15 O.D.	16 O.D.
Diameter of Flange	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20	21½	22½	23½
Thickness of Flange	1	1⅛	1 3/16	1¼	1 5/16	1⅜	1 7/16	1½	1⅝	1¾	1⅞	2	2	2⅛	2 9/16
Diameter of Bolt Circle	5⅞	6⅝	7¼	7⅞	8½	9¼	10⅝	11⅞	13	14	15¼	17¾	19	20	21
Number of Bolts	4	8	8	8	8	8	12	12	12	12	16	16	20	20	20
Size of Bolts	¾	⅝	⅝	¾	¾	¾	¾	⅞	⅞	⅞	⅞	⅞	⅞	⅞	1
Diameter of Bolt Holes	⅞	¾	¾	⅞	⅞	⅞	⅞	1	1	1	1	1	1	1	1⅛
Height of Flange	1 5/16	1⅝	1¾	1 13/16	1⅞	2	2	2 3/16	2¼	2⅜	2 7/16	2 13/16	3 1/16	3 3/16	3¼
Faced	1.40	2.00	2.10	2.60	3.10	3.25	4.55	5.75	6.25	7.35	8.70	14.00	20.50	20.50	25.60
Faced and Drilled	2.00	2.60	2.85	3.85	4.35	4.75	6.25	7.60	8.10	9.40	11.00	17.50	25.50	25.50	31.00

Larger sizes quoted on application.

Steel Pipe Flanges.



STRAIGHT FLANGE.



CURVED FLANGE.

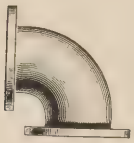
Drop-Forged Steel Pipe Flanges.

Pipe Size	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Diameter Flange	6	6	6	8	9	9	10	10	10½	11½	12½	13½	15½	16½	17½	21
Thickness Flange	⅜	⅜	⅜	⅜	½	½	½	½	½	½	½	½	½	⅝	⅝	⅝
Weight Flange, lbs	3	3	3½	5	7	9½	10	12	12½	13	17	19	21	22	23	--
Bent and Threaded, each	2.00	2.20	2.20	2.40	2.60	2.80	3.20	3.50	3.85	4.20	4.80	6.00	8.40	14.00	15.00	24.00
Not Bent or Threaded, each	1.85	2.05	2.05	2.25	2.45	2.60	3.00	3.30	3.65	4.00	4.60	5.70	8.20	13.75	14.75	23.75

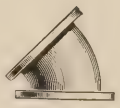
Flanges ordered with rims larger than listed above will be charged at special prices. Flanges bent to less than 18-inch circle, with holes up to 8 inches diameter, will be charged one-half list price extra, and flanges 8 inches and larger rolled to less than 24-inch circle will be double list price.

Standard Flanged Fittings.

Working Steam Pressure 100 lbs.



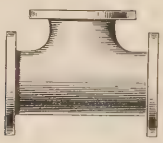
11 A.
ELBOW.



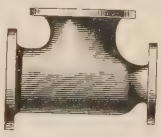
12 B.
45° ELBOW.

Flanged Elbows.

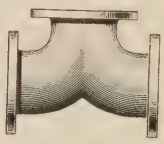
Size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
11A. Faced only	5.00	5.75	6.50	7.25	9.00	9.75	12.00	16.00	20.00	26.00	32.00	44.00	58.00
11A. Faced and Drilled	6.25	7.00	7.75	9.25	11.00	11.75	14.00	19.75	23.75	30.00	36.00	50.00	65.00
12B. Faced only	5.50	6.25	7.25	8.00	10.00	10.75	13.00	16.00	20.00	26.00	32.00	44.00	58.00
12B. Faced and Drilled	6.75	7.50	8.50	10.00	12.00	12.75	15.00	19.75	23.75	30.00	36.00	50.00	65.00



11 C.
SWEEP T.



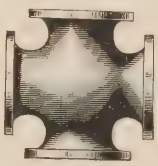
11 D.
REDUCING T.



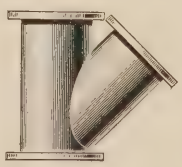
11 E.
SWEEP T.

Flanged Tees.

Size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
11C. Faced only	7.25	8.25	9.50	10.50	13.00	14.25	17.50	23.00	29.00	38.00	46.50	64.00	84.00
11C. Faced and Drilled	9.00	10.00	11.25	13.50	16.00	17.25	20.50	28.75	34.75	44.00	52.50	73.00	95.00
11C. Rdg., Faced only	8.25	9.50	11.00	12.00	15.00	16.25	20.00	26.50	33.50	43.50	53.50	74.00	96.00
11C. Rdg., F. and D.	10.00	11.25	12.75	15.00	18.00	19.25	23.00	32.00	39.00	50.00	60.00	83.00	107.00
11D. Rdg., Faced only	8.25	9.50	11.00	12.00	15.00	16.25	20.00	26.50	33.50	43.50	53.50	74.00	96.00
11D. Rdg., F. and D.	10.00	11.25	12.75	15.00	18.00	19.25	23.00	32.00	39.00	50.00	60.00	83.00	107.00
11E. Faced only	8.25	9.50	11.00	12.00	15.00	16.25	20.00	26.50	33.50	43.50	53.50	74.00	96.00
11E. Faced and Drilled	10.00	11.25	12.75	15.00	18.00	19.25	23.00	32.00	39.00	50.00	60.00	83.00	107.00
11E. Reducing, Faced only	9.50	11.00	12.50	13.75	17.25	18.75	23.00	30.00	38.50	50.00	61.50	85.00	110.00
11E. Reducing, F. and D.	11.25	12.75	14.25	16.75	20.50	21.75	26.00	35.50	44.00	56.50	68.00	94.00	121.00



11 F.
CROSS.



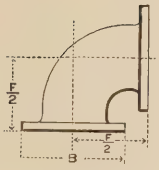
12 A.
Y BRANCH.

Flanged Crosses and Ys.

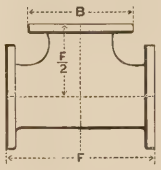
Size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
11F. Faced only	10.00	11.50	13.00	14.50	18.00	19.50	24.00	32.00	40.00	52.00	64.00	88.00	116.00
11F. Faced and Drilled	12.50	14.00	15.50	18.50	22.00	23.50	28.00	39.50	47.50	60.00	72.00	100.00	130.00
11F. Reducing, Faced only	11.50	13.25	15.00	16.75	20.75	22.50	27.50	37.00	46.00	60.00	74.00	100.00	132.00
11F. Reducing, F. and D.	14.00	15.75	17.50	20.75	25.00	26.50	31.50	45.00	53.50	68.00	82.00	112.00	146.00
12A. Faced only	10.00	11.50	13.00	14.50	18.00	19.50	24.00	32.00	40.00	52.00	64.00	88.00	116.00
12A. Faced and Drilled	12.50	14.00	15.50	18.50	22.00	23.50	28.00	39.50	47.50	60.00	72.00	100.00	130.00
12A. Reducing, Faced only	11.50	13.25	15.00	16.75	20.75	22.50	27.50	37.00	46.00	60.00	74.00	100.00	132.00
12A. Reducing, F. and D.	14.00	15.75	17.50	20.75	25.00	26.50	31.50	45.00	53.50	68.00	82.00	112.00	146.00

Dimensions of Standard Flanged Fittings.

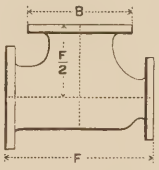
Working Steam Pressure 100 Pounds.



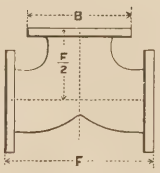
ELBOW.



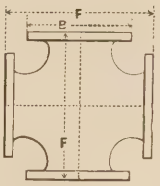
TEE.



TEE, REDUCING.

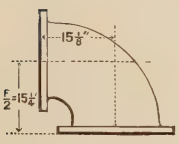


END TEE.

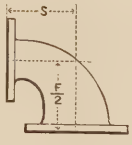


CROSS.

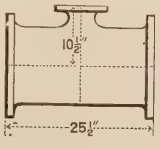
Size of Port	0	2½	3	3½	4	4½	5	6	7	8	9
Size Wrought Iron Pipe		2½	3	3½	4	4½	5	6	7	8	9
Size Cast Iron Pipe		2½	3	3½	4	4½	5	6	7	8	9
Face to Face	F	9½	11	11½	12	12½	14	15	17¾	19	21½
Center to Face	F/2	4¾	5½	5¾	6	6¼	7	7½	8⅞	9½	10¾
Thickness of Shell		9/32	5/16	5/16	5/16	11/32	11/32	13/32	13/32	7/16	15/32
Diameter of Flanges	B	7	7½	8½	9	9¼	10 7/16	11	12½	13½	15
Thickness of Flanges		11/16	3/4	13/16	15/16	15/16	15/16	1	1 1/16	1 1/8	1 1/8
Diameter of Bolt Circle		5½	6	7	7½	7¾	8½	9½	10¾	11¾	13¼
Number of Bolts		4	4	4	8	8	8	8	8	8	12
Size of Bolts		½	½	½	½	⅝	⅝	⅝	⅝	⅝	⅝
Size of Port	0	10	12	13	14	15	16	18	20	22	24
Size Wrought Iron Pipe		10	12	14 O.D.	15 O.D.	16 O.D.	17 O.D.	18 O.D.	20 O.D. / 21 O.D.	22 O.D.	24 O.D.
Size Cast Iron Pipe		10	12	13	14	15	16	18	20	22	24
Face to Face	F	23	25½	28	28	29¼	30½	33	36	40	44
Center to Face	F/2	11½	12¾	14	14	14⅝	15¼	16½	18	20	22
Thickness of Shell		11/16	3/4	13/16	13/16	7/8	15/16	1	1	1 1/16	1 1/8
Diameter of Flanges	B	16	19	20	21	22¼	23½	25	27½	29½	31½
Thickness of Flanges		1 3/16	1¼	1⅜	1⅜	1⅜	1 7/16	1 9/16	1 11/16	1 13/16	1 7/8
Diameter of Bolt Circle		14¼	17	18	18¾	20	21¼	22¾	25	27¼	29¼
Number of Bolts		12	12	12	12	16	16	16	20	20	20
Size of Bolts		¾	¾	⅞	⅞	⅞	⅞	1	1	1	1



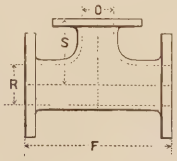
EXAMPLE: 16 x 14 ELBOW.



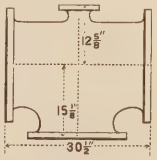
DIMENSION SECTION ELBOW, REDUCING.



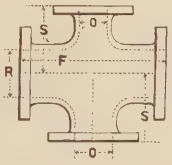
EXAMPLE: 12 x 9 TEE.



DIMENSION SECTION TEE, REDUCING.



EXAMPLE: 16 x 16 x 14 x 4 CROSS.



DIMENSION SECTION CROSS, REDUCING.

Diameter of Run. (R)	Face to Face. (F)	Center to Face. (S)	Diam. of Outlet. (O) 2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24
2½	9½	4¾																			
3	11	5	5½																		
3½	11½	5¼	5¾	5¾																	
4	12	5½	6	6	6																
4½	12½	5¾	6¼	6¼	6¼	6¼															
5	14	6⅛	6⅝	6⅝	6⅝	6⅝	7														
6	15	6¼	6⅝	6⅝	6⅝	6⅝	7	7½													
7	17¾	7¼	7¾	7¾	7¾	7¾	8¼	8½	8⅞												
8	19	7¾	8¼	8¼	8¼	8¼	8⅝	9⅛	9⅜	9½											
9	21½	8⅜	8¾	8¾	8¾	8¾	9¼	9⅝	10	10⅛	10¾										
10	23	8⅞	9⅜	9⅜	9⅜	9⅜	9¾	10¼	10½	10⅝	11⅜	11½									
12	25½	10	10½	10½	10½	10½	10⅞	11¼	11⅝	11¾	12⅜	12½	12¾								
14*	28	11	11½	11½	11½	11½	11⅞	12⅜	12⅝	12¾	13½	13⅝	13¾	14							
15	29¼	11⅝	12	12	12	12	12½	12⅞	13¼	13⅜	14	14¼	14⅜	14⅝	14⅝						
16	30½	12⅛	12⅝	12⅝	12⅝	12⅝	13	13½	13¾	13⅞	14½	14¾	14⅞	15⅛	15¼	15¼					
18	33	13¼	13¾	13¾	13¾	13¾	14	14½	14⅞	15	15⅝	15⅞	16	16¼	16¼	16⅜	16½				
20	36	14¼	14¾	14¾	14¾	14¾	15	15½	15⅞	16	16⅝	16⅞	17	17¼	17¼	17⅜	17½	18			
22	40	15⅜	15⅞	15⅞	15⅞	15⅞	16⅛	16⅜	16⅞	17	17¾	17⅞	18	18¼	18⅜	18½	18⅝	19	20		
24	44	16⅜	16¾	16¾	16¾	16⅞	17¼	17⅝	18	18⅛	18¾	19	19⅛	19¼	19⅜	19½	19⅝	20⅛	21	22	

*NOTE.—13-inch fittings same face to face and center to face as 14-inch.

13″	Fittings for	14″	O. D. Wrought Pipe.
14″	“	14″	C. I. Pipe or 15″ O.D. Wrought Pipe.
15″	“	15″	“ “ 16″ “ “
16″	“	16″	“ “ 17″ “ “
18″	“	18″	“ “ 18″ “ “
20″	“	20″	“ “ 20″ or 21″ O. D. “
22″	“	22″	“ “ 22″ O.D. Wrought Pipe.
24″	“	24″	“ “ 24″ “ “

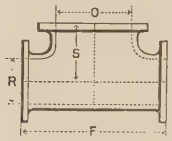
Dimensions of Standard Flanged Fittings—Continued.

Working Steam Pressure 100 Pounds.

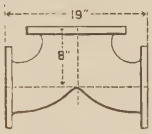
Tees, Increasing on Outlet (Bull Head).



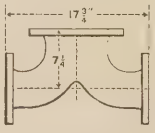
EXAMPLE:
8 x 14
TEE.



DIMENSION SECTION
BULL HEAD TEE.



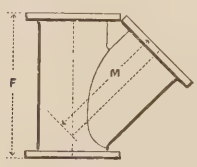
EXAMPLE:
6 x 8
END TEE.



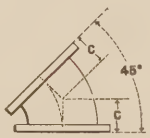
EXAMPLE:
4 x 7
END TEE.

13" Fittings for 14" O. D. Wrought Pipe.
14" " 14" C. I. Pipe or 15" O. D. Wrought Pipe.
15" " 15" " " 16" " "
16" " 16" " " 17" " "
18" " 18" " " 18" " "
20" " 20" " " 20" or 21 O. D. "
22" " 22" " " 22" O. D. Wrought Pipe.
24" " 24" " " 24" " "

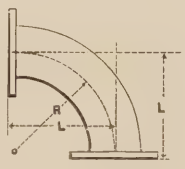
Diameter of Outlet. (O)	Face to Face. (F)	Center to Face. (C)	Diameter of Run..... (R)
2½	9½	4¾	2½
3	11	5¼ 5½	3
3½	11½	5¼ 5½ 5¾	3½
4	12	5¼ 5½ 5¾ 6	4
4½	12½	5¾ 5½ 5¾ 6 6¼	4½
5	14	5⅞ 6⅛ 6⅜ 6⅝ 7	5
6	15	6⅜ 6⅞ 7⅛ 7½ 7½	6
7	17¾	7¼ 7½ 7⅞ 7¾ 8⅞	7
8	19	7½ 7⅞ 8 9 9½	8
9	21½	8½ 8⅝ 9⅝ 10¼ 10¾	9
10	23	8⅞ 9⅞ 10⅜ 11 11½	10
12	25½	10 10½ 11⅛ 11¾ 12¾	12
14*	28	10¾ 11¼ 11⅞ 13 14	14
15	29¼	11⅜ 12 13 14 14⅝	15
16	30½	12 13⅛ 14⅛ 14¾ 15¼	16
18	33	13¼ 14¼ 14⅞ 15⅜ 16½	18
20	36	14¾ 15⅜ 15⅞ 17 18	20
22	40	16⅜ 16⅞ 18 18 20	22
24	44	17¾ 19 19 21 22	24



Y BRANCH.



ELBOW 45°.



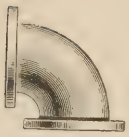
ELBOW, EXTRA LONG TURN.

Size of Port	O	2½	3	3½	4	4½	5	6	7	8	9
Size Wrought Iron Pipe		2½	3	3½	4	4½	5	6	7	8	9
Size Cast Iron Pipe		2½	3	3½	4	4½	5	6	7	8	9
Face to Face	F	10½	12	12¾	14	14¼	15¼	16¾	19	21⅜	22¾
Center to Face	M	9	10¼	10⅞	11¾	12	13	14¼	15⅝	17¼	19½
Center to Face	C	2¾	3¼	3⅜	3½	3⅝	3⅞	4⅜	5	5¼	5½
Center to Face	L	6⅛	7¼	8¼	10⅝	10⅞	11⅛	13	14½	18¼	21½
Radius of Center	R	5¼	5⅞	6¾	9⅛	9¼	9½	11⅜	12¾	16½	19¾

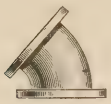
Size of Port	O	10	12	13	14	15	16	18	20	22	24
Size Wrought Iron Pipe		10	12	14 O.D	15 O.D.	16 O.D.	17 O.D.	18 O.D.	20 O.D. / 21 O.D.	22 O.D.	24 O.D.
Size Cast Iron Pipe		10	12	13	14	15	16	18	20	22	24
Face to Face	F	24½	28¾	31½	31½	33⅝	35½	38	41¼	44⅜	47½
Center to Face	M	20½	24¼	26⅝	26⅝	28⅜	30¼	32	33	37½	40¼
Center to Face	C	5⅝	6½	7	7	7½	7⅝	7¾	9	10	10¾
Center to Face	L	24¾	31	33	33	35	36	39	42	45	48
Radius of Center	R	22⅞	28¾	30¾	30¾	32⅝	33½	36⅜	39¼	42	45

Extra Heavy Flanged Fittings.

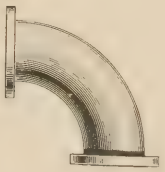
Working Steam Pressure 250 lbs.



9 A.
ELBOW.



10 C.
45° ELBOW.



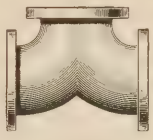
10 A.
EXTRA LONG TURN ELBOW

Extra Heavy Flanged Elbows.

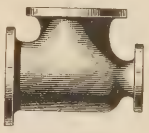
Size	2½	3	3½	4	4½	5	6	7	8	9	10	12
9A. Faced	6.50	7.00	9.00	10.50	12.00	13.00	19.00	22.00	25.00	35.00	43.00	65.00
9A. Extra for Drilling	1.25	1.25	1.25	2.00	2.00	2.00	2.00	3.75	3.75	4.00	4.00	6.00
9A. Reducing, Faced	7.50	8.05	10.35	12.10	13.80	15.00	22.00	25.30	28.75	40.25	49.50	75.00
10C. Faced	5.25	7.00	9.00	9.60	11.00	12.50	18.25	23.00	27.00	43.00	52.50	71.00
10C. Extra for Drilling	1.25	1.25	1.25	2.00	2.00	2.00	2.00	3.75	3.75	4.00	4.00	6.00
10A. Faced	7.50	8.50	10.00	16.00	19.00	20.00	30.00	36.00	47.00	62.00	82.00	155.00
10A. Extra for Drilling	1.25	1.25	1.25	2.00	2.00	2.00	2.00	3.75	3.75	4.00	4.00	6.00



9 C.
SWEEP T.



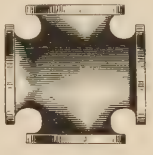
9 D.
SWEEP T.



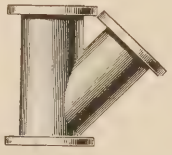
9 E.
REDUCING T.

Extra Heavy Flanged Tees.

Size	2½	3	3½	4	4½	5	6	7	8	9	10	12
9C. Faced	9.50	10.50	12.00	14.00	17.00	19.00	24.00	28.00	37.00	45.00	60.00	95.00
9C. Extra for Drilling	1.75	1.75	1.75	3.00	3.00	3.00	3.00	5.75	5.75	6.00	6.00	9.00
9C. Reducing, Faced	11.00	12.00	14.00	16.00	19.50	22.00	28.00	32.50	42.50	51.75	69.00	109.00
9D. Faced	9 50	10.50	12.00	14.00	17.00	19.00	24.00	28.00	37.00	45.00	60.00	95.00
9D. Extra for Drilling	1.75	1.75	1.75	3.00	3.00	3.00	3.00	5.75	5.75	6.00	6.00	9.00
9D. Reducing, Faced	11.00	12.00	14.00	16.00	19.50	22.00	28.00	32.50	42.50	51.75	69.00	109.00
9E. Reducing, Faced	11.00	12.00	14.00	16.00	19.50	22.00	28.00	32.50	42.50	51.75	69.00	109.00



9 F.
CROSS.



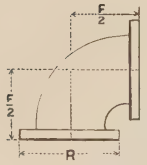
10 B.
Y BRANCH.

Extra Heavy Flanged Crosses and Ys.

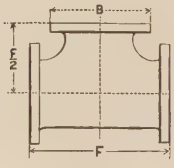
Size	2½	3	3½	4	4½	5	6	7	8	9	10	12
9F. Faced	13.00	14.00	18.00	21.00	24.00	26.00	38.00	44.00	50.00	70.00	86.00	130.00
9F. Extra for Drilling	2.50	2.50	2.50	4.00	4.00	4.00	4.00	7.50	7.50	8.00	8.00	12.00
9F. Reducing, Faced	14.95	16.10	20.70	24.15	27.60	29.90	43.70	50.60	57.50	80.50	99.00	150.00
10B. Faced	11.00	14.00	17.00	22.50	25.00	27.00	36.00	45.00	52.50	71.25	90.00	129.00
10B. Extra for Drilling	1.75	1.75	1.75	3.00	3.00	3.00	3.00	5.75	5.75	6.00	6.00	9.00

Dimensions of Extra Heavy Flanged Fittings.

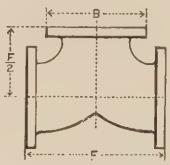
Working Steam Pressure, 250 Pounds.



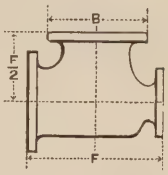
ELBOW.



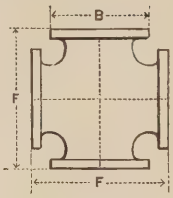
TEE.



END TEE.

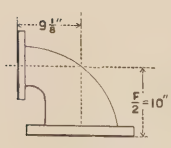


REDUCING TEE.

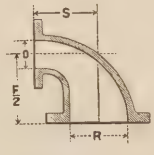


CROSS.

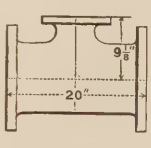
Size of Port	0	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9
Size Wrought Iron Pipe		2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9
Size Cast Iron Pipe	F	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9
Face to Face	F	11	12	13	14	15	16	17 1/2	18 1/2	20	21 1/2
Center to Face	F/2	5 5/8	6 1/16	6 1/2	7	7 1/2	8	8 13/16	9 5/16	10 1/8	10 15/16
Thickness of Shell		9/16	5/8	21/32	23/32	3/4	3/4	13/16	13/16	27/32	7/8
Diameter of Flanges	B	7 1/2	8 1/4	9	10	10 1/2	11	12 1/2	14	15	16
Thickness of Flanges		1	1 1/8	1 1/8	1 1/4	1 5/16	1 3/8	1 7/16	1 1/2	1 5/8	1 3/4
Diameter of Bolt Circle		5 7/8	6 5/8	7 1/4	7 7/8	8 1/2	9 1/4	10 5/8	11 7/8	13	14
Number of Bolts		4	8	8	8	8	8	12	12	12	12
Size of Bolts		3/4	5/8	5/8	3/4	3/4	3/4	3/4	7/8	7/8	7/8
Size of Port	0	10	12	13	14	15	16	18	20	22	24
Size Wrought Iron Pipe		10	12	14 O.D.	15 O.D.	16 O.D.	17 O.D.	18 O.D.	20 O.D. / 21 O.D.	22 O.D.	24 O.D.
Size Cast Iron Pipe	F	10	12	13	14	15	16	18	20	22	24
Face to Face	F	23	25 1/2	28	28	29 1/4	30 1/2	33	36	40	44
Center to Face	F/2	11 3/4	12 7/8	14 1/8	14 1/8	14 31/16	15 1/4	16 9/16	18 1/8	20 1/16	22 1/16
Thickness of Shell		15/16	1 1/8	1 7/32	1 7/32	1 15/16	1 3/8	1 7/16	1 1/2	1 15/32	1 11/16
Diameter of Flanges	B	17 1/2	20	21 1/2	22 1/2	23 1/2	25	27	29 1/2	31 1/2	34
Thickness of Flanges		1 7/8	2	2 1/8	2 1/8	2 3/16	2 1/4	2 3/8	2 1/2	2 5/8	2 3/4
Diameter of Bolt Circle		15 1/4	17 3/4	19	20	21	22 1/2	24 1/2	26 3/4	28 3/4	31 1/4
Number of Bolts		16	16	20	20	20	20	24	24	28	28
Size of Bolts		7/8	7/8	7/8	7/8	1	1	1	1 1/8	1 1/8	1 1/8



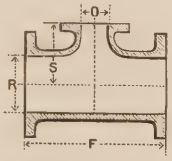
EXAMPLE: 8 x 4 ELBOW.



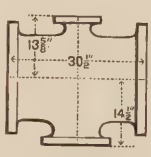
DIMENSION SECTION REDUCING ELBOW.



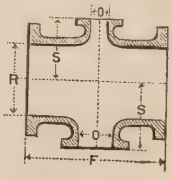
EXAMPLE: 8 x 4 TEE.



DIMENSION SECTION REDUCING TEE.



EXAMPLE: 16 x 16 x 8 x 4 CROSS.



DIMENSION SECTION REDUCING CROSS.

Diameter of Run. (R)	Face to Face. (F)	Center to Face. (S)																			
2 1/2	11	5 1/2																			
3	12	6	6																		
3 1/2	13	6 1/8	6 1/4	6 1/2																	
4	14	6 3/8	6 5/8	6 7/8	7																
4 1/2	15	6 3/4	6 7/8	7 1/8	7 1/4	7 1/2															
5	16	7	7 1/8	7 3/8	7 1/2	7 3/4	8														
6	17 1/2	7 1/2	7 5/8	7 7/8	8 1/8	8 1/4	8 1/2	8 3/4													
7	18 1/2	8	8 1/4	8 3/8	8 5/8	8 3/4	9	9 1/4	9 1/4												
8	20	8 1/2	8 3/4	8 7/8	9 1/8	9 3/8	9 5/8	9 3/4	9 3/4	10											
9	21 1/2	9	9 1/4	9 1/2	9 5/8	9 7/8	10 1/8	10 1/4	10 1/4	10 1/2	10 3/4										
10	23	9 5/8	9 7/8	10	10 1/4	10 1/2	10 3/4	10 7/8	10 7/8	11 1/8	11 1/4	11 1/2									
12	25 1/2	10 7/8	11	11 1/4	11 3/8	11 5/8	11 7/8	12 1/8	12 1/8	12 1/4	12 1/2	12 5/8	12 3/4								
14*	28	12	12 1/8	12 1/4	12 1/2	12 3/4	13	13 1/8	13 1/8	13 3/8	13 5/8	13 3/4	13 7/8	14							
15	29 1/4	12 1/2	12 3/4	12 7/8	13 1/8	13 3/8	13 5/8	13 3/4	13 3/4	14	14 1/4	14 3/8	14 5/8	14 5/8	14 5/8						
16	30 1/2	13	13 1/4	13 1/2	13 5/8	13 7/8	14 1/8	14 1/4	14 1/4	14 1/2	14 3/4	14 7/8	15	15 1/8	15 1/4	15 1/4					
18	33	14 1/8	14 1/4	14 1/2	14 3/4	15	15 1/4	15 3/8	15 3/8	15 5/8	15 7/8	16	16 1/8	16 1/4	16 1/4	16 1/4	16 1/2				
20	36	15 1/4	15 3/8	15 5/8	15 3/4	16	16 1/4	16 1/2	16 1/2	16 5/8	16 7/8	17	17 1/8	17 1/4	17 1/4	17 1/4	17 3/8	17 5/8	18		
22	40	15 3/4	16	16 1/4	16 3/8	16 5/8	16 7/8	17	17	17 1/4	17 1/2	17 5/8	17 3/4	17 7/8	17 7/8	18	18 1/4	18 5/8	20		
24	44	17 3/8	17 1/2	17 3/4	18	18 1/4	18 1/2	18 5/8	18 5/8	19	19 1/8	19 1/4	19 3/8	19 1/2	19 1/2	19 1/2	19 3/4	20 1/4	21 1/4	22	
Diam. of Outlet. (O)		2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9	10	12	14	15	16	18	20	22	24	

13" Fittings for 13" C. I. Pipe or 14" O. D. Wrought Pipe.
14" " 14" " " 15" " "
15" " 15" " " 16" " "
16" " 16" " " 17" " "
18" " 18" " " 18" " "
20" " 20" " " 20" or 21" O. D. "
22" " 22" " " 22" O. D. Wrought Pipe.
24" " 24" " " 24" " "

NOTE.—13-inch fittings same face to face and center to face as 14-inch.

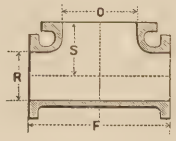
Dimensions of Extra Heavy Flanged Fittings—Continued.

Working Steam Pressure 250 Pounds.

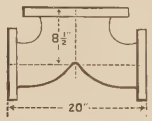
Tees Increasing on Outlet (Bull Head).



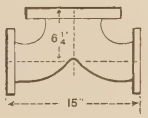
EXAMPLE: 12 x 18. TEE.



DIMENSION SECTION BULL HEAD TEE.



EXAMPLE: 4½ x 8. END TEE.

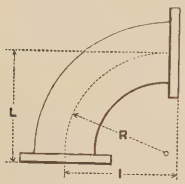


EXAMPLE: 2½ x 4½. END TEE.

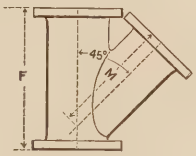
Diameter of Outlet. (O)	Face to Face. (F)	Center to Face. (S)	Diameter of Run (R) 2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16	18	20	22	24
2½	11	5½																			
3	12	5¾	6																		
3½	13	5⅞	6¼	6½																	
4	14	6⅛	6⅜	6¾	7																
4½	15	6¼	6⅝	7	7¼	7½															
5	16		6⅞	7¼	7½	7¾	8														
6	17½			7⅜	7¾	8	8¼	8¾													
7	18½				7¾	8	8¼	8¾	9¼												
8	20					8⅛	8⅜	9	9½	10											
9	21½						8⅝	9¼	9¾	10¼	10¾										
10	23							9⅜	9⅞	10⅜	11	11½									
12	25½								10	10½	11	11⅝	12¾								
14*	28									10⅝	11⅛	11⅜	12⅞	14							
15	29¼										11¼	11¾	13	14	14⅝						
16	30½											11⅞	13	14⅛	14¾	15¼					
18	33												13¼	14¼	14⅞	15½	16½				
20	36													14¾	15¼	15⅞	17	18			
22	40														16⅜	17	18	19	20		
24	44															17⅝	18⅝	19¾	20¼	22	

13″ Fittings for	13″ C. I. Pipe or	14″ O. D. Wrought Pipe.
14″	“ 14″	“ “ 15″ “ “
15″	“ 15″	“ “ 16″ “ “
16″	“ 16″	“ “ 17″ “ “
18″	“ 18″	“ “ 18″ “ “
20″	“ 20″	“ “ 20″ or 21″ O. D. Wrought Pipe.
22″	“ 22″	“ “ 22″ O. D. Wrought Pipe.
24″	“ 24″	“ “ 24″ “ “

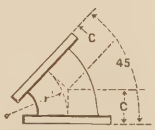
*NOTE.—13-inch Fittings same Face to Face and Center to Face dimensions as 14-inch.



EXTRA LONG TURN ELBOW.



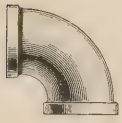
Y BRANCH.



45° ELBOW.

Size of Port	O	2½	3	3½	4	4½	5	6	7	8	9
Size Wrought Iron Pipe		2½	3	3½	4	4½	5	6	7	8	9
Size Cast Iron Pipe		2½	3	3½	4	4½	5	6	7	8	9
Face to Face	F	12	14½	15	16	17	18	20¾	22	23½	25
Center to Face	M	10	11¾	11¾	13¼	14	14¾	17	18½	19½	20¾
Center to Face	C	3	3½	3½	4	4¼	5	5½	5¾	6	6½
Radius of Center	r'	5	5½	5½	6½	6½	8½	9	9½	10½	11½
Center to Face	L	6⅛	7¼	8¼	10⅝	10⅞	11⅛	13	14½	18¼	21½
Radius of Center	R	5¼	5⅞	6¾	9⅛	9¼	9½	11⅜	13¾	16½	19¾
Size of Port	O	10	12	13	14	15	16	18	20	22	24
Size Wrought Iron Pipe		10	12	14 O.D.	15 O.D.	16 O.D.	17 O.D.	18 O.D.	20 O.D. / 21 O.D.	22 O.D.	24 O.D.
Size Cast Iron Pipe		10	12	13	14	15	16	18	20	22	24
Face to Face	F	27½	32	36	36	36½	39½	43	45½	49	52¾
Center to Face	M	22¾	26	29¼	29½	30	32¼	35¾	37¼	40¼	43½
Center to Face	C	6¾	7½	8¼	8¼	8½	9	9½	10½	11	11½
Radius of Center	r'	12	12½	14½	14½	15	15	17	18½	19½	20½
Center to Face	L	24¾	31	33	33	35	36	39	42	45	48
Radius of Center	R	22⅞	28¾	30¾	30¾	32⅝	33½	36⅜	39¼	42	45

Cast Iron Long Turn Fittings—Screwed.



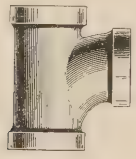
No. 1.
WATER ELBOW.



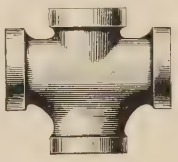
No. 2.
DOUBLE BRANCH WATER ELBOW.

Water Elbows—Screwed.

Size, inches	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. 1, each	.32	.40	.55	.80	1.20	2.25	3.25	3.50	5.50	6.50	8.75	13.00	17.00	25.50	30.00	40.00
" 2, "	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00



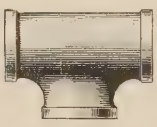
No. 3.
WATER TEE, SINGLE SWEEP.



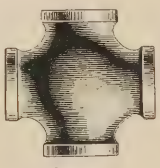
No. 4.
WATER CROSS.

Water Tee and Cross—Screwed.

Size, inches	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. 3, each	.48	.60	.82	1.20	1.80	3.40	4.90	5.25	8.25	9.75	13.25	19.50	25.50	38.00	45.00	60.00
" 4, "	.85	1.10	1.50	2.15	3.20	6.00	8.75	9.50	15.00	17.50	24.00	35.00	45.00	68.00	80.00	107.00



No. 5.
WATER TEE, DOUBLE SWEEP.



No 6.
SWEEP CROSS.

Sweep Tee and Cross—Screwed.

Size, inches	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. 5, each	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00
" 6, "	.85	1.10	1.50	2.15	3.20	6.00	8.75	9.50	15.00	17.50	24.00	35.00	45.00	68.00	80.00	107.00

These fittings are made in reducing sizes by filling up ends, thus avoiding the use of screwed bushings.
For Reducing Sizes add 50% to the above list.
For Galvanized Fittings double the above list.

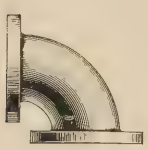


EXTRA LONG TURN ELBOW.

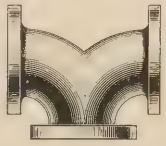
Extra Long Turn Elbow—Screwed.

Size, inches	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Each	.50	.70	.90	1.20	2.00	3.00	4.00	5.00	7.00	9.00	13.00	20.00	28.00	34.00	40.00	60.00

Cast Iron Long Turn Fittings—Flanged.



No. 1.
WATER ELL.



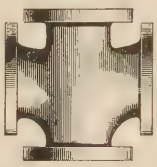
No. 2.
DOUBLE BRANCH WATER ELBOW

Water Elbows—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. 1. Faced, each	5.25	5.50	6.50	7.50	8.00	10.00	11.00	13.25	17.50	22.00	29.00	36.00	49.00
" 1. F. and D., "	6.25	6.75	7.75	8.75	10.00	12.00	13.00	15.50	21.00	26.00	33.00	40.00	55.00
" 2. Faced, "	8.00	8.25	9.50	11.00	12.00	15.00	16.25	20.00	26.50	33.50	43.50	53.50	74.00
" 2. F. and D., "	9.50	10.00	11.25	12.75	15.00	18.00	19.25	23.00	32.00	39.00	50.00	60.00	83.00



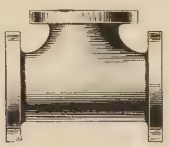
No. 3.
WATER TEE, SINGLE SWEEP.



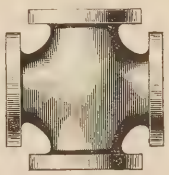
No. 4.
WATER CROSS.

Water Tee and Cross—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. 3. Faced, each	8.00	8.25	9.50	11.00	12.00	15.00	16.25	20.00	26.50	33.50	43.50	53.50	74.00
" 3. F. and D., "	9.50	10.00	11.25	12.75	15.00	18.00	19.25	23.00	32.00	39.00	50.00	60.00	83.00
" 4. Faced, "	11.00	12.50	15.00	17.50	20.00	24.00	27.00	35.00	45.00	56.00	70.00	84.00	115.00
" 4. F. and D., "	13.00	15.00	17.50	20.00	24.00	28.00	31.00	39.00	52.00	64.00	78.00	92.00	127.00



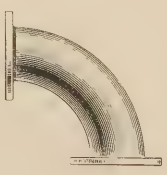
No. 5.
WATER TEE, DOUBLE SWEEP.



No. 6.
SWEEP CROSS.

Sweep Tee and Cross—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
No. 5. Faced, each	8.00	8.25	9.50	11.00	12.00	15.00	16.25	20.00	26.50	33.50	43.50	53.50	74.00
" 5. F. and D., "	9.50	10.00	11.25	12.75	15.00	18.00	19.25	23.00	32.00	39.00	50.00	60.00	83.00
" 6. Faced, "	11.00	12.50	15.00	17.50	20.00	24.00	27.00	35.00	45.00	56.00	70.00	84.00	115.00
" 6. F. and D., "	13.00	15.00	17.50	20.00	24.00	28.00	31.00	39.00	52.00	64.00	78.00	92.00	127.00



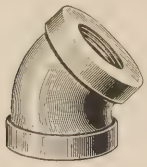
Extra Long Turn Elbow—Flanged.

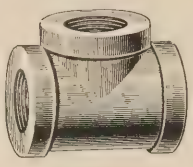
Size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
Faced, each	6.10	7.25	9.25	11.50	14.50	15.75	20.00	27.25	33.50	56.00	64.75	97.50	130.00
F. & D., "	7.35	8.50	10.50	13.50	16.50	17.75	22.00	31.00	37.25	60.00	68.75	103.50	137.00

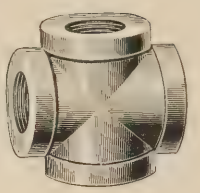
NOTE.—Flanged Fittings will always be furnished Faced only, unless otherwise ordered.

Extra Heavy and Hydraulic Fittings.


ELBOW.

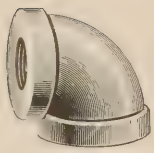

45° ELBOW.

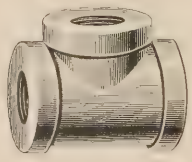

TEE.

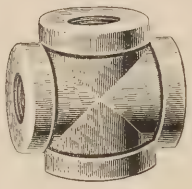

CROSS.

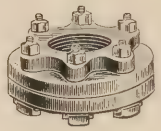
Cast Iron Fittings for 250 lbs. Working Pressure, Screwed.

Sizes	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Elbows	.35	.45	.60	.75	1.25	2.00	2.75	3.50	4.25	5.50	8.00	12.00	17.00	28.00	40.00
" Reducing	.40	.52	.69	.86	1.44	2.30	3.16	4.02	4.90	6.32	9.20	13.80	19.55	32.20	46.00
" 45°	.45	.55	.70	.90	1.50	2.50	3.50	4.50	5.50	6.75	9.75	14.50	21.00	35.00	----
Tees	.55	.70	.90	1.15	1.80	3.00	4.25	5.50	6.75	8.25	12.00	18.00	25.00	42.00	60.00
Tees, Reducing	.75	1.00	1.25	1.60	2.50	4.25	5.00	7.25	11.50	11.50	15.00	23.00	32.00	----	----
Crosses	1 00	1.25	1.60	2.00	3.25	5.50	7.88	10.00	15.00	15.00	22.00	----	----	----	----
" Reducing	1.15	1.44	1.84	2.30	3.74	6.32	9.05	11.50	17.25	17.25	25.30	----	----	----	----


ELBOW.


TEE.


CROSS.

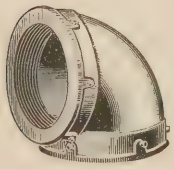

FLANGE UNION.

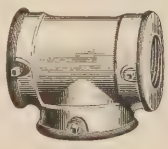
Hydraulic Cast Iron Fittings for 1000 lbs. Working Pressure.

Sizes	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Hydraulic Elbows	.30	.45	.50	.70	.80	1.25	1.85	2.25	2.75	3.00	4.00	5.00	6.00
" " not illustrated, 45°	.45	.65	.75	1.00	1.25	1.75	2.25	2.50	3.00	3.50	4.50	5.25	6.25
" Tees	.45	.65	.75	1.05	1.30	1.90	2.75	3.30	4.00	4.50	6.00	7.50	9.00
" Crosses	.60	.90	1.00	1.40	1.60	2.50	3.70	4.50	5.50	6.00	8.00	10.00	12.00
" Flange Union	1.20	1.30	1.40	1.50	2.00	2.25	3.00	3.50	4.00	4.50	5.00	5.50	6.50

Tight Joint Hydraulic Fittings.

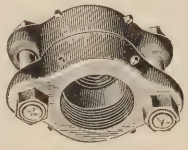
Made of best Malleable Iron and adapted for service from 750 to 5,000 pounds Hydraulic working pressure. Where fittings are required for other than Hydraulic service, such as Compressed Air, Gases, etc., the duty must be described in order that fittings of the proper weight may be supplied.


"T. J." ELBOW.


"T. J." TEE.


"T. J." CROSS.


"T. J." COUPLING.


"T. J." FLANGE UNION.

Tight Joint Hydraulic Fittings, 750 lbs. Working Pressure.

Sizes	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	5	6
Elbows	.65	.75	.95	1.10	1.45	1.80	2.20	2.80	4.30	5.50	8.10	10.70	14.85
Tees	.90	1.10	1.25	1.40	2.05	2.60	3.10	4.00	6.10	7.10	10.25	13.95	18.80
Crosses	1.30	1.50	1.90	2.20	2.90	3.60	4.40	5.60	----	----	----	----	----
Couplings	.60	.75	.85	1.00	1.30	1.55	2.00	2.70	3.55	4.55	6.75	8.95	11.20
Flange Unions	----	4.00	4.40	5.00	6.25	7.50	9.40	11.25	14.90	17.40	24.35	31.85	39.35

"T. J." Reducing Couplings and Elbows.

Sizes	¾ x ½	1 x ¾	1¼ x 1	1½ x 1¼	2 x ¾	2 x 1	2 x 1¼	2 x 1½	2½ x 2
Couplings	1.10	1.40	1.70	2.20	2.50	2.75	3.00	3.10	3.80
Elbows	1.20	1.60	2.00	2.40	----	----	- --	3.10	4.75

Tight Joint Hydraulic Fittings.

Reducing Tees for 750 lbs. Pressure.

Size	¾ x ¾ x ½	1 x 1 x ¾	1¼ x 1¼ x 1	1½ x 1½ x ½	1½ x 1½ x ¾	1½ x 1½ x 1
Each	1.55	2.25	2.90	3.40	3.45	3.50
Size	1½ x 1½ x 1¼	2 x 2 x 1½	2½ x 2½ x 1	2½ x 2½ x 1¼	2½ x 2½ x 1½	2½ x 2½ x 2
Each	3.60	4.40	6.70	6.80	6.90	7.00

"T. J." Fittings for 1500 lbs. Working Pressure.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½
Elbows	.70	.90	1.05	1.25	1.60	2.00	2.45	3.10	4.75
Tees	1.05	1.25	1.35	1.60	2.25	2.90	3.45	4.40	6.75
Crosses	1.45	1.65	2.10	2.40	3.20	3.95	4.85	6.15	----
Couplings	.70	.80	1.00	1.10	1.45	1.75	2.20	3.00	3.90
Flange Unions	----	4.40	5.00	5.60	6.85	8.75	10.85	13.10	17.35

Reducing Couplings and Elbows.

Size	¾ x ½	1 x ¾	1¼ x 1	1½ x 1¼	2 x ¾	2 x 1	2 x 1¼	2 x 1½	2½ x 2
Couplings	1.20	1.55	1.85	2.40	2.75	3.00	3.30	3.40	4.20
Elbows	1.30	1.75	2.15	2.65	----	----	----	3.40	5.20

Reducing Tees.

Size	¾ x ¾ x ½	1 x 1 x ¾	1¼ x 1¼ x 1	1½ x 1½ x ½	1½ x 1½ x ¾	1½ x 1½ x 1
Each	1.70	2.45	3.15	3.75	3.80	3.85
Size	1½ x 1½ x 1¼	2 x 2 x 1½	2½ x 2½ x 1	2½ x 2½ x 1¼	2½ x 2½ x 1½	
Each	3.95	4.85	7.35	7.45	7.55	

"T. J." Fittings for 3000 lbs. Working Pressure.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½
Elbows	.75	1.00	1.10	1.35	1.75	2.18	2.68	3.40	5.25
Tees	1.10	1.35	1.50	1.75	2.50	3.15	3.80	4.85	7.40
Crosses	1.60	1.80	2.30	2.60	3.50	4.35	5.30	6.75	----
Couplings	.75	.90	1.05	1.25	1.60	1.90	2.40	3.25	4.30
Flange Unions	---	4.85	5.50	6.15	7.50	9.60	12.00	----	----

Reducing Couplings and Elbows.

Size	¾ x ½	1 x ¾	1¼ x 1	1½ x 1¼	2 x ¾	2 x 1	2 x 1¼	2 x 1½	2½ x 2
Couplings	1.30	1.70	2.10	2.65	3.00	3.30	3.60	3.70	4.60
Elbows	1.45	1.90	2.35	2.90	----	----	----	3.70	5.70

Reducing Tees.

Size	¾ x ¾ x ½	1 x 1 x ¾	1¼ x 1¼ x 1	1½ x 1½ x ½
Each	1.90	2.70	3.45	4.10
Size	1½ x 1½ x ¾	1½ x 1½ x 1	1½ x 1½ x 1¼	2 x 2 x 1½
Each	4.20	4.30	4.40	5.30

"T. J." Fittings for 5000 lbs. Working Pressure.

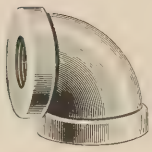
Made only in Straight Sizes.

Size	¼	⅜	½	¾	1	1¼	1½
Elbows	.85	1.05	1.25	1.50	1.90	2.35	2.90
Tees	1.25	1.50	1.65	1.90	2.75	3.50	4.40
Couplings	.85	1.05	1.20	1.35	1.75	2.05	2.65

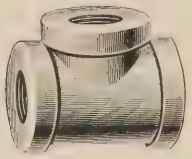
"T. J." Bushings and Plugs.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Bushings	.90	1.00	1.10	1.20	1.40	1.60	1.90	2.40	2.70	3.30	4.80	5.50	7.50	8.70
Plugs	.20	.25	.30	.40	.45	.55	.65	.80	1.25	1.40	1.90	2.50	3.00	3.60

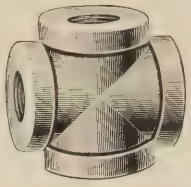
Steel Hydraulic Fittings, 6000 Pounds Test.



STEEL HYDRAULIC ELBOW.



STEEL HYDRAULIC TEE.



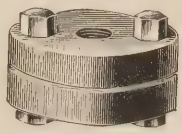
STEEL HYDRAULIC CROSS.



STEEL HYDRAULIC COUPLING.

Steel Hydraulic Fittings.

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Elbows, each	.30	.37	.50	.60	.80	1.00	1.50
Tees, each	.45	.60	.75	.90	1.20	1.50	2.25
Crosses, each	.60	.75	1.00	1.20	1.60	2.00	3.00
Couplings, each	.30	.37	.50	.60	.80	1.00	1.50

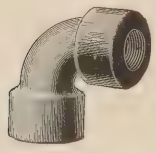


STEEL HYDRAULIC FLANGE UNION.

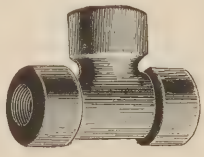
Steel Hydraulic Flange Unions, 6000 Pounds Test.

Size	3/8	1/2	1/2	3/4	3/4	1	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2 1/2	2 1/2	3	4
Bolt Circle	2 1/8	2 1/2	2 1/2	2 7/8	2 7/8	3 1/4	3 1/4	3 5/8	3 5/8	4	4	4 1/2	4 1/2	5	5	6	7 1/2
No. of Bolts	2	2	3	2	3	2	3	2	3	2	4	2	4	4	4	4	5
Weight, lbs	4	6	6	7	8	7	9	8	12	10	16	12	20	16	24	34	60
Each	1.00	1.00	1.25	1.25	1.50	1.50	1.75	2.00	2.25	2.40	2.75	2.80	3.25	3.20	3.75	4.50	6.00

When connecting these Unions the pipe is threaded so as to project slightly through one flange, and the other so that it does not reach the surface, and holds a packing thus placed directly between the ends of the pipe.



STEEL ELBOW. Screwed.



STEEL TEE. Screwed.



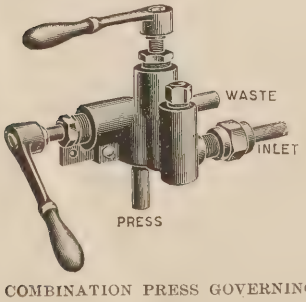
STEEL ELBOW. Flanged.



STEEL TEES. Flanged.

Steel Fittings, Easy Turn, 6000 Pounds Test.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Elbow, Screwed, each	.60	.80	1.10	1.40	2.00	----	----	----	----	----	----	----	----
Tee, " "	1.00	1.35	1.70	2.10	3.00	----	----	----	----	----	----	----	----
Elbow, Flanged, each	----	----	----	10.00	11.00	12.00	13.50	16.00	19.00	22.00	24.00	27.00	30.00
Tee, " "	----	----	----	15.00	16.50	18.00	20.00	24.00	28.50	33.00	36.00	40.00	45.00



COMBINATION PRESS GOVERNING VALVE.

Combination Press Governing Valve.

In order that a press may be under complete control by a valve and still allow the pump to continue its motions when piped directly to a press, a combination of three valves is necessary—one release valve for pump, one for the press and a check valve intermediate. In this form all the valves mentioned are in one block, and it is usually placed on the press itself.

Size	1/2 x 1/2 x 1/2	1/2 x 3/4 x 3/4	3/4 x 3/4 x 3/4	3/4 x 1 x 1
	27.50	30.00	32.50	35.00

Hydraulic Valves and Fittings—Bronze.

Standard for Pressures to 5,000 lbs.

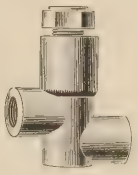
Special for Pressures to 20,000 lbs.



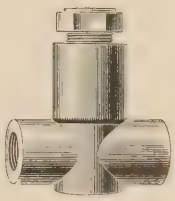
STOP VALVE,
¾ inch and Smaller.



STOP VALVE,
1 inch and Larger.



CHECK VALVE,
¾ inch and Smaller.



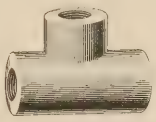
CHECK VALVE,
1 inch and Larger.

Hydraulic Valves—Standard.

Size	¼	⅜	½	¾	1	1¼	1½	2
Hydraulic Stop Valves	4.30	4.65	5.65	7.40	11.00	18.00	25.00	45.00
Hydraulic Check Valves	3.65	4.15	5.00	6.15	10.00	17.00	22.00	41.00



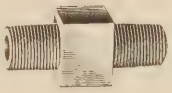
ELBOW.



TEE.



CROSS.



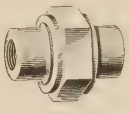
NIPPLE.

Hydraulic Fittings—Standard.

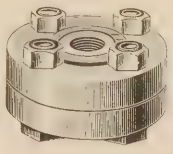
Size	¼	⅜	½	¾	1	1¼	1½	2
Hydraulic Elbow	.60	.85	1.40	1.90	2.40	3.80	5.30	9.00
Hydraulic Tee	.90	1.25	1.85	2.75	3.65	5.85	7.80	15.00
Hydraulic Cross	1.22	1.66	2.48	3.70	4.90	7.76	10.38	20.00
Hydraulic Nipple	.65	.90	1.08	1.82	1.90	2.50	3.30	4.80



COUPLING.



UNION,
With Ground Joint.



FLANGE UNION.

Hydraulic Fittings—Standard.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Hydraulic Coupling	.60	.85	1.00	1.42	1.86	2.72	4.00	7.20	----	----
Hydraulic Union	1.60	1.95	2.20	2.70	3.30	4.80	6.40	8.30	11.25	17.00
Hydraulic Flange Union	----	----	4.50	6.15	7.90	9.60	11.40	13.55	16.20	18.60

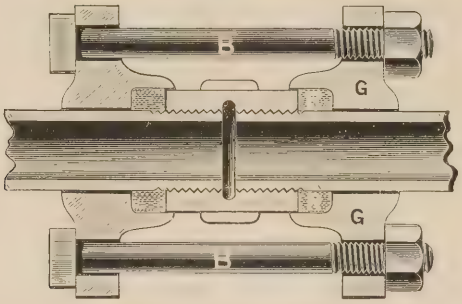
Hydraulic Safety Valve—Standard.

Size	½	¾	1	1¼	1½
Hydraulic Safety Valve	8.50	10.00	12.50	17.00	20.00

In ordering give Working Pressure.

The Nason Ammonia Valves and Fittings.

Gland End Pattern.



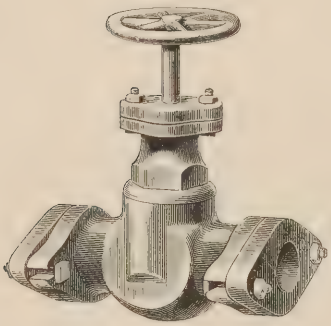
ENLARGED SECTION OF NASON AMMONIA COUPLING, SHOWING CONSTRUCTION OF JOINT.

This section cut illustrates the Nason Ammonia Joint designed and originated by us and used in all the Nason Gland End Valves and Fittings of our manufacture.

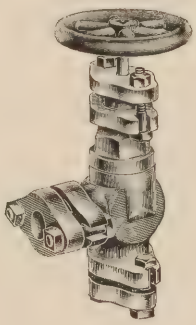
In construction: The ends of the pipe to be connected, being first threaded with a standard thread, they are then screwed securely into the body of the valve or fitting. A retaining cup or recess immediately surrounding the threaded end of the pipe contains a Pure Gum Ring (R) which, upon the tightening of the bolts (B) is acted upon by the Stuffing Box Gland (G), which action forces the rubber ring securely into the recess around the pipe, making an effectual and permanently tight joint under all usual conditions of ammonia pressure and temperature.

All valves and fittings of this class are threaded with especial care, and to insure their absolute integrity each finished article is tested under 500 to 1,000 lbs. hydrostatic pressure before leaving our works

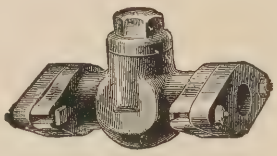
Gland End Valves.



GLAND END GLOBE VALVE.



GLAND END ANGLE VALVE.



GLAND END CHECK VALVE.

Gland End Globe, Angle and Check Valves.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5
Globe Valve	3.00	4.00	5.00	6 50	8.00	9.00	11.80	17.00	22.00	29.00	75.00	94.00	122.00
Angle Valve	3.00	4.00	5.00	6.50	8.00	9.00	11.80	17.00	22.00	29.00	75.00	94.00	122.00
Check Valve	2.15	3.00	3.50	4.50	7.50	8.50	9.50	10.25	15.00	18.50	60.00	70.00	------

Sizes from 1¼ inch to 3 inch, inclusive, can be furnished with flanged ends at a small additional cost. Sizes 3½, 4 and 5 inches can be furnished with Gland or Flanged Ends. They are Extra Heavy and have finished Bonnets and Flanges.



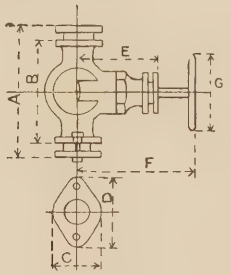
GLAND END NEEDLE EXPANSION VALVE.

Needle Valves.

Size	1/4	3/8	1/2	3/4	1
Globe or Angle Pattern	4.50	6.00	7.50	9.75	12.00

Larger Sizes can be Furnished if Required.

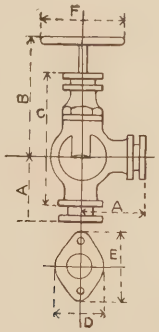
Dimensions and Weights of the Nason Ammonia Valves.



GLAND END AMMONIA GLOBE VALVE.

Dimensions and Weights of Ammonia Globe Valves.

Pipe Size Inches	A	B	C	D	E	F	G	Weights Complete
1/4	5 1/8	3 5/8	1 5/8	3	3 1/8	4 7/8	3	4 1/2 lbs.
3/8	5 3/4	4 1/4	2	3 1/4	5 1/4	7 1/2	5 1/4	9 1/2 "
1/2	6 3/4	4 3/4	2 1/4	3 5/8	5 1/2	7 3/4	5 1/4	11 1/2 "
3/4	7 7/8	5 5/8	2 3/4	4 1/8	6	8 3/8	5 1/4	15 "
1	9	6 1/2	3	5	6 1/2	9 1/4	6 1/2	26 "
1 1/4	10 1/2	7 3/8	3 5/8	5 1/2	7	9 7/8	6 1/2	34 "
1 1/2	11 3/4	8 3/8	3 1/2	6 3/8	7	10 3/4	7 1/2	46 "
2	13 1/2	9 3/4	5	7 1/8	7 7/8	12	9 1/4	66 "
2 1/2	14 3/4	10 7/8	5 5/8	8 1/4	8 3/4	12 1/8	10	91 1/2 "
3	17	12 1/2	6 1/8	9 1/2	8 3/4	12 1/4	10	106 "
3 1/2	23 1/2	19	6 3/4	10	11 5/8	17	11 1/4	251 "
4	24 3/4	19	7	10 1/2	13 1/2	19 1/4	13 3/4	323 "
5	30 1/4	22 1/2	9	12 3/8	15 1/4	21 1/2	15 1/2	512 "



GLAND END AMMONIA ANGLE VALVE.

Dimensions and Weights of Ammonia Angle Valves.

Pipe Size Inches	A	B	C	D	E	F	Weights Complete
1/4	2 1/2	5	5	1 5/8	3	3	4 1/4 lbs.
3/8	2 3/4	7 3/4	7 1/2	2	3 1/4	5 1/4	9 1/2 "
1/2	3 3/8	7 3/4	7 3/4	2 1/4	3 5/8	5 1/4	11 1/2 "
3/4	3 7/8	8 3/4	8 3/8	2 3/4	4 1/8	5 1/4	15 1/2 "
1	4 1/2	8 3/4	9 5/8	3	5	6 1/2	26 "
1 1/4	5 1/4	10	10 1/2	3 5/8	5 1/2	6 1/2	33 "
1 1/2	5 3/4	10 3/4	11	3 1/2	6 3/8	7 1/2	45 "
2	6 3/4	12	13 1/8	5	7 1/8	9 1/4	67 1/2 "
2 1/2	7 1/2	12 1/8	14 1/4	5 5/8	8 1/4	10	91 "
3	8 1/4	12 1/8	15	6 1/8	9 1/2	10	104 "
3 1/2	11 3/4	17	21 1/8	6 3/4	10	11 1/4	252 "
4	12 3/8	19 1/4	23	7	10 1/2	13 3/4	324 "
5	15 1/8	21 1/2	26 1/2	9	12 3/8	15 1/2	513 "

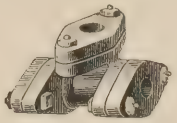
Dimensions of Check Valve Bodies are same as Globe Pattern.

The Nason Ammonia Valves and Fittings.

Gland End Pattern.



GLAND END ELBOW.



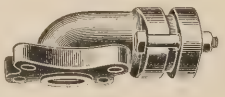
GLAND END TEE.

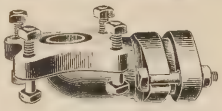


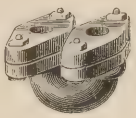
GLAND END CROSS.

Gland End Elbows, Tees and Crosses.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5
Elbows, each	.50	.65	.80	1.05	1.60	2.15	3.05	4.20	6.80	11.00	12.00	14.00	20.25
Reducing Elbows, each	.70	.90	1.05	1.40	2.10	2.70	3.80	5.35	8.30	13.50	15.00	18.00	25.00
Tees, each	.75	1.05	1.20	1.55	2.50	3.00	4.40	7.75	11.00	15.50	18.00	19.00	25.00
Tees, reducing any one opening to one size, each	.95	1.30	1.55	2.05	3.25	3.75	5.40	9.75	13.25	18.75	22.00	24.00	30.00
Crosses, each		1.52	1.80	2.30	4.00	5.00							
Crosses, reducing any one opening to one size, each		1.75	2.25	3.00	5.00	6.00							







GLAND END RETURN BEND.

GLAND END RETURN BEND—DIVIDED PATTERN.

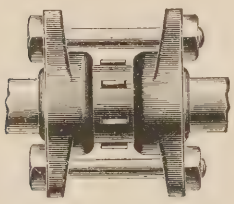
Gland End Return Bends.

Size	¾	1	1¼	1½	1½	2	2	2½	3	4
Center to Center, in	2½	3½	3¾	3¾	4¼	5⅛	4¼	5¼	5¼	6½
Return Bend, each	1.50	2.00	3.00	5.00	5.00	6.20	6.20	7.50	9.50	16.75

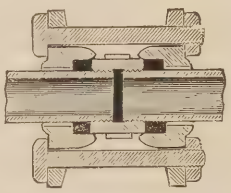
Gland End, Divided Return Bend for Ammonia Condenser.

Made only in 2-inch size, each 9.00

Center to Center ..... 4¼ inches.



GLAND END COUPLING.



SECTION.

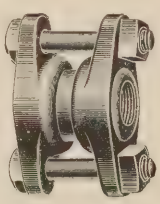
Gland End Couplings.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Couplings, each	.38	.53	.68	.90	1.20	1.50	2.15	2.80	4.80	6.20	9.00	12.00

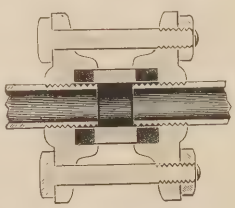
In the Nason Ammonia "Coupling" the pipe is screwed directly into the body of the fitting, reinforced with Gum Ring, Gland and Follower, as in the Standard Nason Joint.

Couplings will be furnished with right and left thread, unless ordered otherwise.

Sizes ¼ to 1½-inch with 2 bolts; 2-inch, 3 bolts; larger, 4 bolts.



THE NASON "BOYLE" UNION.



SECTION.

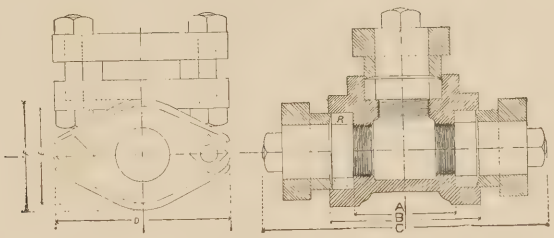
The Nason "Boyle" Unions.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Boyle Unions, each	.38	.53	.68	.90	1.20	1.50	2.15	2.80	4.80	6.20	9.00	12.00

In the Boyle Union the pipe is screwed into the gland and the joint made by compressing the rubber rings around the pipe and thimble ends by the tightening of the bolts.

Sizes ¼ to 1½-inch with 2 bolts; 2-inch, 3 bolts; larger with 4 bolts.

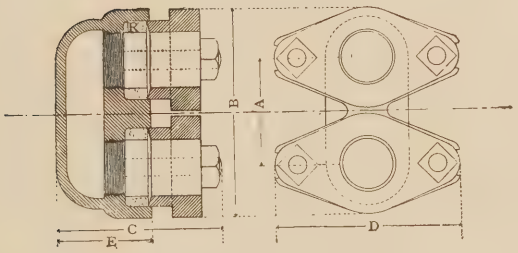
Dimensions and Weights of the Nason Ammonia Fittings.



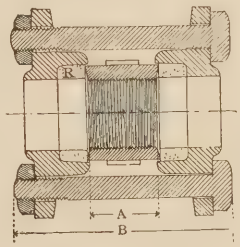
DIAGRAMS APPLYING TO ELBOWS, TEES AND CROSSES.

Dimensions and Weights of Ammonia Elbows, Tees and Crosses, Gland End.

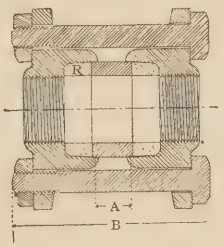
Pipe, Size. Inches.	A	B	C	D	E	F	Weight, Elbows, Lbs.	Weight, Tees, Lbs	Weight, Crosses, Lbs.
1/4	1 1/2	2 1/2	4 7/8	2 7/8	1 5/8	1 5/8	2 1/2	3	----
3/8	1 3/4	2 3/4	5 3/4	3 1/4	2	1 13/16	3 1/2	4	4
1/2	1 15/16	3	5 13/16	3 5/8	2 1/4	2 1/16	5	6	8 1/2
3/4	2 7/16	3 9/16	6 15/16	4 1/8	2 11/16	2 11/16	7	9 1/2	11
1	2 3/4	4 1/4	8 1/16	4 15/16	3 1/16	3 1/4	10	15	19
1 1/4	3 1/8	4 7/8	8 7/8	5 1/2	3 5/8	3 5/8	14	20	25 1/2
1 1/2	3 3/4	5 1/2	10 1/2	6 5/16	3 1/2	4 1/8	20	27	36
2	4 3/8	6 1/4	11 15/16	7 1/8	4 7/8	4 7/8	29 1/2	42	54
2 1/2	5 1/4	7 1/2	13 1/2	8 1/4	5 5/8	5 3/4	43 1/2	62	----
3	6 1/16	9 1/4	16 3/8	9 1/2	6 3/16	6 3/16	60	86	----
3 1/2	6 15/16	11 1/2	16 1/2	10	6 3/4	6 3/4	78 1/2	108	----
4	7 7/8	11 3/8	19 3/8	10 1/2	7 1/8	7 3/8	90	129	----
5	9 7/8	11	22 7/16	12 3/8	9	9	134	209	----



AMMONIA RETURN BEND, GLAND END.



AMMONIA COUPLING.



BOYLE UNION.

Size.	A	B	C	D	E	Weight, Lbs.
3/4	2 1/2	5 1/8	4 7/8	4 1/8	3 1/4	7 1/2
1	3 1/2	6 1/2	5 7/8	4 7/8	3 7/8	12
1 1/4	3 3/4	7 5/8	6 1/2	5 1/2	4 1/2	19
1 1/2	3 3/4	8 3/8	7 1/8	6 5/16	4 13/16	22
2	5 1/8	10	9	7 1/8	6 1/8	41
2	4 1/4	8 1/4	6 5/8	7	5 7/8	28 1/2
2 1/2	5 1/4	4 7/8	9 3/8	8 1/2	7	50
3	5 1/4	10 7/8	10 5/8	8 1/4	7	48
4	6 1/2	13 1/2	12 1/2	10 3/8	8 1/4	99

Size.	A	B	Weight, Lbs.
1/4	3/8	2 3/4	1 1/4
3/8	3/8	2 3/4	1 1/4
1/2	1/2	3 1/2	2 1/8
3/4	1/2	3 1/2	2 3/4
1	5/8	4 1/2	3 3/4
1 1/4	3/4	5 1/8	4 5/8
1 1/2	3/4	5 1/8	5 1/4
2	1	6 1/4	8
2 1/2	1 1/4	7	13
3	1 1/2	8	23
4	1 3/4	9	36

Size.	A	B	Weight, Lbs.
1/4	3/8	2 3/4	1 1/4
3/8	3/8	2 3/4	1 1/4
1/2	1/2	3 1/2	2 1/8
3/4	1/2	3 1/2	2 3/4
1	5/8	4 5/8	3 3/4
1 1/4	3/4	5	7 1/8
1 1/2	3/4	5 1/4	11
2	7/8	5 1/2	16
2 1/2	1 1/8	6	20
3	1 1/8	7	26
4	1 3/8	7 1/8	29

"R" designates location of Gum Ring Packing.

The Nason Ammonia Valves and Fittings.

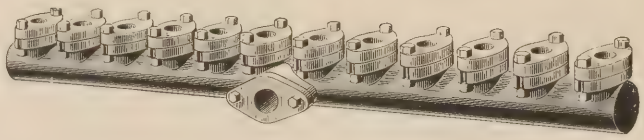
Gland End Pattern.



AMMONIA STRAINER.

Ammonia Strainers.

Size	1	1¼	1½	2
Each	11.00	12.00	13.50	15.00



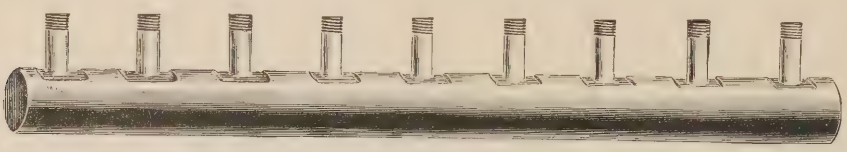
Gland End Cast Iron Ammonia Header.

No. of Branches		3	4	5	6	7	8	9	10	11	12
Price 1 in. Outlets	5 inches center to center	7.75	9.25	10.50	12.00	13.25	14.50	16.00	17.25	18.75	20.00
Price 1¼ in. Outlets	6 inches center to center	9.25	11.00	12.50	14.25	17.00	17.50	19.25	20.75	22.50	24.00
Price 1½ in. Outlets	6 inches center to center	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00

Back Outlets from ¾ inch to 2½ inches
Side Outlets from ¾ inch to 2 inches
} without extra charge { Inside Diameter, 2½ inches. Outside Diameter, 3½ inches.

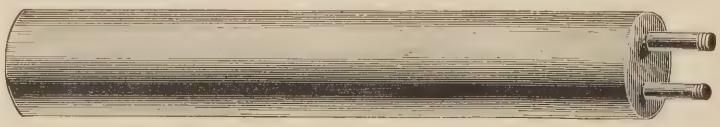
By stopping off in casting, the above headers can be furnished as follows :

1 inch.....10, 15 and 20 inches center to center.
1¼ to 1½ inch.....12, 18 and 24 inches center to center.



Wrought Iron Ammonia Header.

Made of Extra Strong Pipe in any length with Welded Ends and with any required number of outlets. Prices quoted on application for Headers with extra heavy Nipples, with or without Union Connections on Outlets. Tapped with back or side outlet, or with open run.



Wrought Iron Ammonia Receiver or Oil Trap.

Made of Extra Strong Wrought Iron Pipe with Welded Ends. Tested under 1,000 lbs. hydrostatic pressure. Outlets tapped as desired.

Prices Quoted on Application for any Sizes Specified.

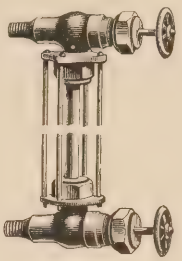
The Nason Ammonia Valves and Fittings.

Automatic Ammonia Gauge.

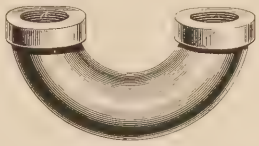
Containing our Safety Attachment and so arranged as to close automatically in the event of the breaking of the glass tube, thus enabling the engineer to at once approach the apparatus without danger of coming in contact with escaping gas.

Furnished in standard length guards and glass tube for 16 inch center of openings, but can be made to any length required, at a slight additional cost.

½ inch, standard with guards and glass	$10.00
½ inch, extra heavy " "	12.50
¾ inch, standard " "	12.50
¾ inch, extra heavy " "	15.00
1 inch, standard " "	15.00
1 inch, extra heavy " "	20.00



AUTOMATIC AMMONIA GAUGE.



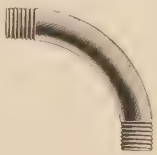
RETURN BEND, WIDE PATTERN.

Special Wide Pattern Cast Iron Return Bends for Brine Coils.

Size	1	1	1	1¼	1¼	1½	2
Center to Center	3½	4	6	4	6	7	6
Each, Plain	.35	.38	.50	.45	.60	.75	.90
Each, Galvanized	.70	.76	1.00	.90	1.20	1.50	1.80



WROUGHT IRON RETURN BEND.



WROUGHT IRON QUARTER BEND.

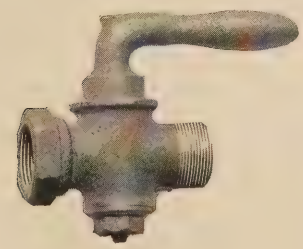
Wrought Iron Return Bends.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Center to Center	4	5	6	8	10	12	16	20	24	28
Height over all	5½	6	7½	10	11	13½	17½	18	20	22
Each, Plain	.40	.54	.84	1.24	1.62	2.50	4.86	10.54	15.28	20.54
Each, Galvanized	.50	.66	1.02	1.56	2.06	3.32	6.52	12.75	18.74	25.00

Wrought Iron Quarter Bends.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Radius	2	2½	3	4	5	6	8	10	12	14
Center to End	5	5½	7	9	10	12	16	16	18	20
Each, Plain	.34	.44	.64	.88	1.14	1.70	3.20	7.22	10.54	13.74
Each, Galvanized	.42	.54	.76	1.12	1.52	2.26	4.30	8.78	12.64	16.40

Made from Extra Heavy Wrought Iron Pipe. Larger or Special Bends Quoted on Specification.



BRINE COCK.

Brass Brine Cocks.

Size	1	1¼
Each	2.20	3.00

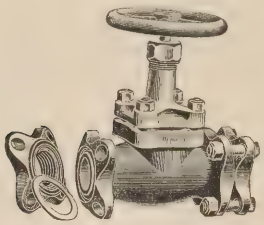
The Nason Ammonia Valves and Fittings.

De La Vergne Pattern.

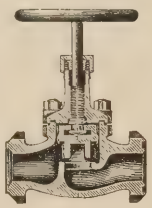
Extra Heavy Ammonia Valves with soft seat, each tested to a hydrostatic pressure of 1,000 lbs. per square inch.

By opening the valve full it may be repacked while under pressure.

Flanges of these valves correspond to the flanges of all fittings of this pattern, so they can be used together.



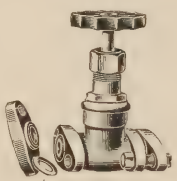
AMMONIA GLOBE VALVE.



SECTION.

Ammonia Globe Valves.

Size	½	¾	1	1¼	1½	2	2½	3	4
Length of Body	4	6¼	6	7	8	10	10½	12½	15
Outside Diameter of Flange	1⅞ x 3 9/16	4½	4½	5	5	6½	7	8¾	8¾
Each	4.50	6.00	7.50	9.50	16.00	18.00	30.00	37.00	61.00



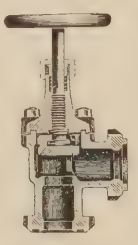
EXTRA LONG BODY AMMONIA GLOBE VALVE.

Extra Long Body Ammonia Globe Valves.

Size	½	1	1¼	2	2½	3	4
Length of Body	9½	9½	10½	11½	12½	15½	19
Outside Diameter of Flange	4½	4½	5	6½	8¾	8¾	8¾
Each	6.00	9.00	15.00	20.00	30.00	42.00	70.00



AMMONIA ANGLE VALVE.



SECTION.

Ammonia Angle Valves.

Size	½	¾	1	1¼	1½	2	2½	3	4
Center of Valve to face of Flange	2	3⅛	3⅜	3½	4	5	5¼	6¼	7½
Outside Diameter of Flange	1⅞ x 3 9/16	4½	4½	5	5	6½	7	8¾	8¾
Each	4.50	6.00	7.50	9.50	16.00	18.00	30.00	37.00	61.00

Companion Flanges, Bolts and Gaskets are not included in above prices.

The Nason Ammonia Valves and Fittings.

De La Vergne Pattern.



AMMONIA GATE VALVE.

An Ammonia Gate Valve of improved design, having a direct passage the full size of the pipe; double-gate pattern, with soft seats and parallel faces, which can be removed and refaced should the occasion demand. The mechanism for operating the gates and forcing them against their seats is very simple and effective. Provided with large hand wheel and can be opened and closed with little effort.

Ammonia Gate Valve.

Size	5	6	7	8
Length of Body	15	15½	16	16½
Each	60.00	70.00	80.00	96.00



AMMONIA ELBOW.



SECTION.

Standard Ammonia Elbows—Mild Steel.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	5	6	7	8
Each	.88	.88	1.00	1.25	2.12	2.50	3.40	4.35	6.25	8.75	10.63	15.00	21.87	30.00	37.50



REDUCING AMMONIA ELBOW.

Reducing Ammonia Elbows—Mild Steel.

Size	⅜x¼	½x⅜	¾x½	1x¾	1x½	1¼x½	1¼x1	1½x½	1½x1	2x1	2x1¼	2x1½	2½x1¼	2½x1½	2½x2	3x1
Each	1.10	1.10	1.25	1.56	2.65	3.12	3.12	3.12	3.12	5.43	5.43	5.43	7.81	7.81	7.81	10.93
Size	3x1¼	3x1½	3x2	3x2½	4x1½	4x2	4x2½	4x3	5x1½	5x2	5x2½	5x3	6x3	7x2	7x3	
Each	10.93	10.93	10.93	10.93	13.28	13.28	13.28	13.28	18.75	18.75	18.75	18.75	27.33	37.50	37.50	



FLANGED AMMONIA ELBOW.



SECTION.

Flanged Ammonia Elbows—Mild Steel.

Size	1	1	1	1	1	1	1¼	1¼	1¼	1¼	1½	1½	1½	1½
Male or Female	M	F	M	F	M	F	M	F	M	F	M	F	M	F
No. of Bolts	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Outside Diameter of Flange	4¼	4¼	5	5	6½	6½	5	5	6½	6½	5	5	6½	6½
Center of Pipe to Face of Flange	2⅝	2⅝	2⅝	2⅝	3⅜	3⅜	3½	3½	3⅜	3⅜	3	3	3¾	3¾
Each	2.50	2.50	2.75	2.75	4.75	4.75	3.75	3.75	4.75	4.75	4.85	4.85	4.85	4.85
Size	2	2	2½	2½	2½	2½	3	3	4	4	5	5		
Male or Female	M	F	M	F	M	F	M	F	M	F	M	F		
No. of Bolts	4	4	4	4	4	4	4	4	4	4	6	6		
Outside Diameter of Flange	6½	6½	7	7	8¾	8¾	8¾	8¾	8¾	8¾	10½	10½		
Center of Pipe to Face of Flange	3	3	4	4	4½	4½	4¾	4¾	5⅛	5⅛	6½	6½		
Each	5.00	5.00	7.25	7.25	9.00	9.00	11.25	11.25	12.50	12.50	21.25	21.25		

Companion Flanges, Bolts and Gaskets are not included in above prices.

The Nason Ammonia Valves and Fittings.

De La Vergne Pattern.



FULL FLANGED AMMONIA ELBOW.

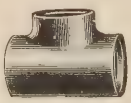
Full Flanged Ammonia Elbows.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8
No. Bolts	4	8	8	8	8	8	8	8	8	12	12	12	12
Outside Diameter of Flange	1 7/8 x 3 9/16	4 1/2	4 1/2	5	5	6 1/2	7	8 3/4	8 3/4	10 1/2	12	14 1/2	15 1/2
Each	1.50	1.75	2.25	2.75	3.13	4.00	6.88	8.25	9.75	15.00	20.00	35.50	48.75

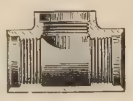
Reducing Full Flanged Ammonia Elbows.

Size of Run	4	5	6	6	7	7	8	8	8
Outside Diameter of Flange	8 3/4	10	12	12	14 1/2	14 1/2	15 1/2	15 1/2	15 1/2
Size of Outlet	2	3	4	2	5	3	6	4	2
Outside Diameter of Flange	6 1/2	8 3/4	8 3/4	6 1/2	10 1/2	8 3/4	12	8 3/4	6 1/2
No. of Bolts	6	10	10	10	12	10	12	12	12
Each	7.75	13.00	17.75	15.75	30.00	27.50	35.00	32.50	30.00

The Flanges of these Fittings are all Female.



AMMONIA TEE.



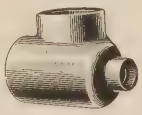
SECTION.

Standard Ammonia Tees—Mild Steel.

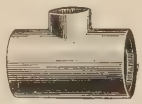
Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8
Each	1.20	1.25	1.50	2.00	2.50	3.25	4.50	5.75	8.75	12.50	15.00	18.75	22.50	37.50	45.00



T REDUCING ON RUN.



T REDUCING ON RUN.



T REDUCING ON OUTLET.

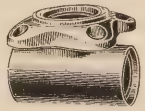
Reducing Ammonia Tees—Mild Steel.

Size Run	3/8	1/2	1/2	3/4	3/4 x 1/2	1	1 x 1/2	1 x 1/2	1	1 1/4	1 1/4	1 1/4 x 1/2
Size Outlet	1/2	3/4	1	1/2	3/4	1/2	1/2	1	1 1/4	3/8	1/2	1 1/4
Each	1.50	1.88	1.88	2.25	2.25	2.75	2.75	2.75	2.75	4.38	4.38	4.38
Size Run	1 1/4	1 1/4 x 1	1 1/4 x 1	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2 x 1 1/4	1 1/2 x 1	2	2 x 1 1/2
Size Outlet	1	1	1 1/4	2	1/2	3/4	1	1 1/4	1 1/2	1 1/4	1/2	1 1/4
Each	4.38	4.38	4.38	4.38	6.00	6.00	6.00	6.00	6.00	6.00	7.25	7.25
Size Run	2 x 1/2	2	2 x 1	2	2 x 1 1/4	2 x 1 1/4	2 x 1 1/4	2	2 1/2	2 1/2 x 1 1/4	2 1/2	2 1/2 x 2
Size Outlet	2	1	2	1 1/4	1	1 1/4	2	2 1/2	1 1/4	2 1/2	2	2
Each	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	11.00	11.00	11.00	11.00
Size Run	2 1/2	3	3	3 x 1 1/4	3 x 1 1/4	3	3 x 2	3 x 2	3	3 x 3	3	3
Size Outlet	3	1	1 1/4	2	3	2	1	2	2 1/2	2	4	5
Each	11.00	15.63	15.63	15.63	15.63	15.63	15.63	15.63	15.63	15.63	15.63	15.63
Size Run	4	4	4 x 2	4 x 2	4 x 2	4	4 x 3	4	4	5	5	5
Size Outlet	1 1/4	2	2	3	4	2 1/2	2	3	5	1 1/4	2	2 1/2
Each	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	23.75	23.75	23.75
Size Run	5	5	5	6	6	6	7	7	8	8		
Size Outlet	3	4	6	2	3	4	2	3	5	6		
Each	23.75	23.75	23.75	28.13	28.13	28.13	46.88	46.88	56.25	56.25		

Companion Flanges, Bolts and Gaskets are not included in above prices.

The Nason Ammonia Valves and Fittings.

De La Vergne Pattern.

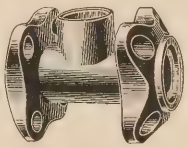


AMMONIA FLANGED TEE.

Ammonia Tees, Flanged—Mild Steel.

Size	½	½	½	½	1	1	1	1	1	1	1¼	1¼
Outside Diameter of Flange	4	4	4½	4½	4½	4½	5	5	6½	6½	5	5
Male or Female	M	F	M	F	M	F	M	F	M	F	M	F
Each	1.75	1.75	3.12	3.12	3.12	3.12	3.75	3.75	5.00	5.00	3.75	3.75
Size	1¼	1¼	1½	1½	1½	1½	2	2	2	2	2	2
Outside Diameter of Flange	6½	6½	5	5	6½	6½	6½	6½	8	8	8¾	8¾
Male or Female	M	F	M	F	M	F	M	F	M	F	M	F
Each	5.00	5.00	3.75	3.75	5.00	5.00	6.25	6.25	8.13	8.13	8.75	8.75
Size	2½	2½	2½	2½	3	3	3	3	4	4	4	4
Outside Diameter of Flange	7	7	8¾	8¾	6½	6½	8¾	8¾	6½	6½	8¾	8¾
Male or Female	M	F	M	F	M	F	M	F	M	F	M	F
Each	12.00	12.00	15.00	15.00	10.62	10.62	15.00	15.00	13.75	13.75	15.00	15.00

All above are Four-Bolt Flanges

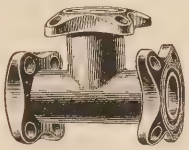


AMMONIA FLANGED TEE.

Ammonia Flanged Tees—Mild Steel.

Size Run	1	1¼	1¼	2	2	2½	3	3	4	5
Outside Diameter of Flange	5	6½	6½	6½ & 8	6½ & 8¾	8¾	8¾	8¾ & 10½	8¾	10½
Size Outlet	1	1	2	1	1¼	1¼	1¼	2	2	2
Each	5.62	8.75	6.25	14.38	12.13	16.25	15.00	20.88	15.00	25.63

All Four-Bolt Flanges.



FULL FLANGED AMMONIA TEE.

Full Flanged Ammonia Tees.

Size	½	¾	1	1¼	1½	2	2½	3	4	5	6	7	8
Outside Diameter of Flange	1 7/8 x 3 2/16	4½	4½	5	5	6½	7	8¾	8¾	10½	12	14½	15½
No. Bolts	6	12	12	12	12	12	12	12	12	18	18	18	18
Each	1.75	2.25	3.63	4.38	5.50	8.25	13.00	16.25	20.00	28.50	38.25	68.75	81.25

Reducing Full Flanged Ammonia Tees.

Size Run	4	5	6	6	7	7	8	8	8
Outside Diameter of Flange	8¾	10½	12	12	14½	14½	15½	15½	15½
Size Outlet	2	3	4	2	5	3	6	4	2
Outside Diameter of Flange	6½	8¾	8¾	6½	10½	8¾	12	8¾	8¾
No. Bolts	12	16	16	16	18	16	18	16	16
Each	12.50	20.00	30.00	28.75	42.50	40.00	50.00	47.50	45.00

All Female Flanges.



AMMONIA CROSS.



SECTION.

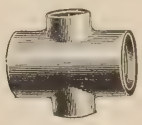
Standard Ammonia Crosses—Mild Steel.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	5	6
Each	1.50	1.88	2.50	3.00	3.13	4.38	5.00	6.25	10.00	16.25	18.75	20.00	30.00

Companion Flanges, Bolts and Gaskets are not included in above prices.

The Nason Ammonia Valves and Fittings.

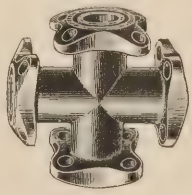
De La Vergne Pattern.



REDUCING AMMONIA CROSS.

Reducing Ammonia Crosses—Mild Steel.

Size Run	1x1	1x1½	1¼x1¼	1¼x1¼	1½x1½	1½x1½	1½x1½	2x2	2x2
Size Outlet	½x½	1x½	1x1	½x½	½x½	1x1	1¼x1¼	½x½	1x1
Each	3.75	3.75	5.00	5.00	7.00	7.00	7.00	8.50	8.50
Size Run	2x2	2x2	2½x2½	3x3	3x3	4x4	4x4	4x4	5x5
Size Outlet	1¼x1¼	2x1½	2x2	1¼x1¼	2x2	1¼x1¼	2x2	3x3	5x3
Each	8.50	8.50	13.00	14.50	14.50	22.50	22.50	22.50	36.00



FULL FLANGED AMMONIA CROSS.

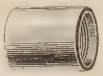
Full Flanged Crosses.

Size	½	¾	1	1¼	1½	2	2½	3	4	5	6	7	8
No. Bolts	8	16	16	16	16	16	16	16	16	24	24	24	24
Outside Diameter of Flanges	1⅞x3 9/16	4½	4½	5	5	6½	7	8¾	8¾	10½	12	14½	15½
Each	2.50	3.25	4.00	4.50	5.25	7.00	14.00	15.00	17.50	29.00	37.50	70.00	87.50

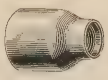
Reducing Full Flanged Crosses.

Size Run	4	5	6	6	7	7	8	8	8
Outside Diameter of Flanges	8¾	10	12	12	14½	14½	15½	15½	15½
Size Outlet	2	3	4	2	5	3	6	4	2
Outside Diameter of Flanges	6½	8¾	8¾	6½	10½	8¾	12	8¾	6½
No. Bolts	16	20	20	20	24	20	24	20	20
Each	13.25	27.50	32.50	30.75	57.50	55.75	70.00	67.50	65.00

Flanges on above are all Female.



STRAIGHT AMMONIA COUPLING.



REDUCING AMMONIA COUPLING.

Standard Ammonia Couplings—Mild Steel.

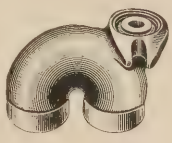
Size	½	1	1¼	1½	2	2½	3	4	1¼x1	2x1
Each	.75	1.13	1.50	1.80	2.13	3.50	3.75	5.00	1.25	2.00



AMMONIA RETURN BEND.



SECTION.



AMMONIA RETURN BEND, WITH SIDE OUTLET.

Ammonia Return Bends—Mild Steel.

Size	1	1	1¼	1¼	1¼	1½	1½	2	2
Center to Center	2½	4	3	4½	6	5½	3½	3¾	6
Each	2.50	3.12	3.25	3.75	4.38	4.00	3.75	4.75	5.00

Return Bend with Side Outlet—Mild Steel.

Size.	Center to Center.	Outlet Pipe.	Face to Flange of Outlet.	Oval Flange.	Each.
2	2¾	½	5⅛	2½x5	6.00

Companion Flanges, Bolts and Gaskets are not included in above prices.

The Nason Ammonia Valves and Fittings.

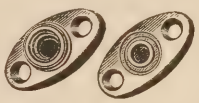
De La Vergne Pattern.



SQUARE FLANGES.

Square 4-Bolt Ammonia Flanges, Male and Female—Mild Steel.

Size	1/4	3/8	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	3/4
O. D. of Flange	4	4	4	4 1/2	5	6	6 1/2	8 3/4	4	4 1/2	5
Per Pair, M. and F.	2.00	2.00	2.00	2.50	3.50	3.60	4.50	9.50	2.50	2.50	3.50
Size	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2
O. D. of Flange	4	4 1/2	5	6	6 1/2	5	6	6 1/2	8 3/4	5	6
Per Pair, M. and F.	2.00	2.50	3.50	3.60	4.50	3.50	3.60	4.50	9.50	3.50	3.60
Size	1 1/2	1 1/2	2	2	2	2	2	2 1/2	2 1/2	3	3	4
O. D. of Flange	6 1/2	8 3/4	6	6 1/2	7	8	8 3/4	7	8 3/4	7	8 3/4	8 3/4
Per Pair, M. and F.	4.50	9.50	3.60	4.50	5.50	6.38	9.50	9.00	9.50	9.00	9.50	9.50



OVAL FLANGES.

Oval 2-Bolt Ammonia Flanges, Male and Female—Mild Steel.

Size	1/4	3/8	3/8	1/2	1/2	3/4	1
Width	1 7/8	1 7/8	2 1/2	1 7/8	2 1/2	2 1/2	2 1/2
Length	3 9/16	3 9/16	5	3 9/16	5	5	5
Per Pair, M. and F.	1.76	1.76	2.24	1.76	2.24	2.24	2.24



BUSHING.

Ammonia Bushings—Mild Steel.

Size	1x1/2	1 1/4x1/2	1 1/4x1	1 1/2x1/2	2x1/2	2x1	2x1 1/4	2x1 1/2	2 1/2x1/2	2 1/2x1	2 1/2x1 1/4	2 1/2x2	3x1 1/2
Each	.75	.75	.75	1.00	1.25	1.25	1.25	1.25	1.95	1.95	1.95	1.95	2.40
Size	3x1	3x1 1/4	3x1 1/2	3x2	3x2 1/2	4x1/2	4x1	4x1 1/4	4x1 1/2	4x2	4x2 1/2	4x3	5x1 1/4
Each	2.40	2.40	2.40	2.40	2.40	4.50	4.50	4.50	4.50	4.50	4.50	4.50	8.50
Size	5x1 1/2	5x2	5x3	5x4	6x2	6x3	6x4	6x5	7x3	7x5	7x6	8x6	8x7
Each	8.50	8.50	8.50	8.50	8.75	8.75	8.75	8.75	10.00	10.00	10.00	11.25	11.25



LEAD GASKET.

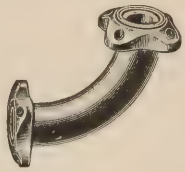
Size Gasket	7/8x1 3/8	1 1/2x2	1 1/2x2	1 11/16x2 3/8	2 1/16x2 11/16	2 1/2x3 1/4	2 3/4x3 3/4	3 1/4x4 3/8	5 1/32x5 15/16	6 1/8x7 1/8	6 3/4x7 3/4	8x9	9x10
Shape Flange	Oval	Oval	Square	Square	Square	Square	Square	Square	Square	Round	Round	Round	Round
O. D. of Flange	1 7/8x3 9/16	2 1/2x5	4	4 1/2	5	6	6 1/2x8	7	8 3/4	10 1/2	12	14 1/2	15 1/2
Each	.08	.08	.08	.08	.08	.20	.20	.20	.40	.40	.50	.60	.70

The Nason Ammonia Valves and Fittings.

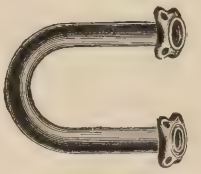
De La Vergne Pattern.



FLANGED RETURN BEND.



FLANGED ELBOW BEND.



PIPE BEND, FLANGED.

Flanged Return Bends.

Size.	Center to Center.	Outside Diameter of Flange.	Each.
2 inch.	10 inch.	6½ inch.	8.75
2 inch.	15 inch.	6½ inch.	10.00

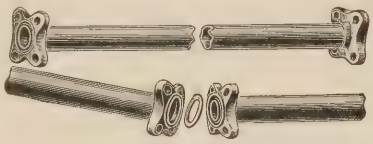
Flanged Elbow Bends.

Size.	Center to Face of Flange.	Outside Diameter of Flange.	Each.
2 inch.	9 inch.	6½ inch.	8.75

Pipe Bends, Flanged.

Size of Pipe, inches	2	2	2	2
Center to Center of Pipe	10	10	15	15
Center of Bend to Face	27	36	27	36
Each	8.00	8.75	8.00	8.75

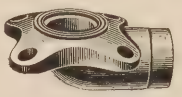
Special Center Bends Quoted on Application.



DIRECT EXPANSION LENGTHS.

Size Pipe, inches	2	2	2	2
Length in feet	5	10	15	20
Per length	8.00	10.00	13.00	15.00

Special Lengths and Sizes Made to Order.



FLANGED OR DIVIDED RETURN BEND.

Flanged Ammonia Return Bends, Male and Female—Mild Steel.

Size	⅜	½	½	½	½	1	1¼	1¼	1½	2	2	2½
No. Bolts	2	2	4	4	4	4	4	4	4	4	4	4
Outside Dia. of Flange	1⅞x3 9/16	2½x5	4	4½	6½	6½	6½	8¾	7	8	8¾	8¾
Per Pair, M. and F.	2.60	2.80	3.00	3.76	8.00	8.00	8.00	15.00	15.00	12.50	16.26	20.00

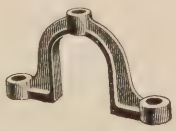


CONDENSER GUTTER PIPE.

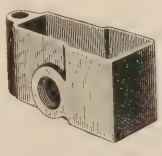
Size.	Length.	Each.	Size.	Length.	Each.
2 inch.	5 feet.	8.00	2 inch.	10 feet.	10.50



GUTTER PIPE EYE BOLT.
Each.... .80



GUTTER PIPE END BRACKET.
Each.... 1.20



WATER BOX.
Each.... 5.00

Companion Flanges, Bolts and Gaskets are not included in above prices.

The Nason Ammonia Valves and Fittings.

De La Vergne Pattern.



Condenser Clamps.



Cast Iron.

End Top Clamps.

Size of pipe hole.	Size of pipe.	Number of pipes.	Distance between centers of pipes	Dist. from end to center of first pipe.	Length over all.	Price per pair.
3 in.	2 in.	2	3¾ in.	1⅞ in.	7½ in.	$1.90
3 "	2 "	3	3¾ "	1⅞ "	11¼ "	2.50
3 "	2 "	4	3¾ "	1⅞ "	15 "	3.00
3 "	2 "	5	3¾ "	1⅞ "	18¾ "	3.40
3 "	2 "	6	3¾ "	1⅞ "	22½ "	3.75
3 "	2 "	8	3¾ "	1⅞ "	30 "	4.50
3 "	2 "	10	3¾ "	1⅞ "	37½ "	4.90
3 "	2 "	12	3¾ "	1⅞ "	45 "	5.65

End Foot Clamps.

3 in.	2 in.	4	3¾ in.	4 in.	17⅛ in.	$2.85
3 "	2 "	4	3¾ "	7 "	20⅛ "	3.60
3 "	2 "	8	3¾ "	4 "	32⅛ "	4.70
3 "	2 "	8	3¾ "	7 "	35⅛ "	5.45
3 "	2 "	10	3¾ "	4 "	39⅝ "	6.60
3 "	2 "	10	3¾ "	7 "	42⅝ "	7.40
3 "	2 "	12	3¾ "	4 "	47⅛ "	7.90
3 "	2 "	12	3¾ "	7 "	50⅛ "	8.65

Center Top Clamps.

2⅜ in.	2 in.	2	3¾ in.	1⅞ in.	7½ in.	$1.90
2⅜ "	2 "	3	3¾ "	1⅞ "	11¼ "	2.50
2⅜ "	2 "	4	3¾ "	1⅞ "	15 "	3.00
2⅜ "	2 "	5	3¾ "	1⅞ "	18¾ "	3.40
2⅜ "	2 "	6	3¾ "	1⅞ "	22½ "	3.75
2⅜ "	2 "	8	3¾ "	1⅞ "	30 "	4.50
2⅜ "	2 "	10	3¾ "	1⅞ "	37½ "	4.90
2⅜ "	2 "	12	3¾ "	1⅞ "	45 "	5.65

Center Foot Clamps.

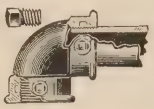
2⅜ in.	2 in.	4	3¾ in.	4 in.	17⅛ in.	$2.85
2⅜ "	2 "	4	3¾ "	7 "	20⅛ "	3.60
2⅜ "	2 "	8	3¾ "	4 "	32⅛ "	4.70
2⅜ "	2 "	8	3¾ "	7 "	35⅛ "	5.45
2⅜ "	2 "	10	3¾ "	4 "	39⅝ "	6.60
2⅜ "	2 "	10	3¾ "	7 "	42⅝ "	7.40
2⅜ "	2 "	12	3¾ "	4 "	47⅛ "	7.90
2⅜ "	2 "	12	3¾ "	7 "	50⅛ "	8.65

The Nason Ammonia Valves and Fittings.

Tight Joint Pattern.

These fittings are made of the best Malleable Iron, and each one is subjected to a test pressure of 1,000 lbs. before leaving the works. The method of construction of the "Tight Joint" consists of boring out the part of the fitting which is threaded to receive the screwed pipes, a small recess about 1-16 inch deep and ¼ inch wide, as shown in the cuts, in which lead is afterwards cast to form a ring in the recess. A hole about ¼ inch in diameter reaches from the outside of the fitting to this recess. Whenever the fitting is of a larger diameter, two, three or more of such openings are provided on the circumference of the recess at proper distances. In these openings, which are threaded and through which the lead intended to form the ring is poured, are screwed small set-screws, which, pressing on the surface of the lead of the ring, force it to flow, so to speak, on the thread of the fitting and of the pipe screwed in, rendering the joint absolutely tight.

Tight Joint Fittings.



"T. J." ELBOW.

Straight Elbows.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	.60	.70	.80	.90	1.15	1.40	1.85	2.40	3.75	4.90	6.00	6.85	9.60	10.90

Right and Left Elbows.

Size	¼	⅜	½	¾	1	1¼	1½	2
Each	.65	.75	.90	1.00	1.30	1.55	1.95	2.60

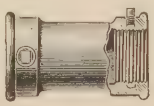
Reducing Elbows.

Size	⅜x¼	½x¼	½x⅜	¾x¼	¾x½	1x½	1x¾	1¼x½	1¼x¾	1¼x1	1½x1	1½x1¼
Each	.80	.90	.95	1.10	1.10	1.35	1.50	1.60	1.65	1.70	2.05	2.20

Size	2x1	2x1¼	2x1½	2½x2	3x2	3x2½	3½x3	4x2	4x3	4x3½	5x4	6x5
Each	2.25	3.00	3.30	4.25	5.30	5.50	6.90	7.35	7.90	8.40	10.70	13.75

45° Elbows.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	6
Each	.90	1.10	1.35	1.60	2.00	2.65	4.20	5.35	6.65	7.65	13.75



"T. J." COUPLING.

Straight Couplings.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	.50	.65	.75	.85	1.10	1.35	1.65	2.20	3.30	4.20	5.10	6.25	8.30	9.25

Right and Left Couplings.

Size	¼	⅜	½	¾	1	1¼	1½	2
Each	.60	.70	.80	.90	1.25	1.50	1.75	2.40

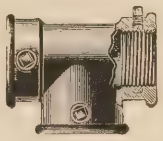
Reducing Couplings.

Size	⅜x¼	½x¼	½x⅜	¾x⅜	¾x½	1x⅜	1x½	1x¾	1¼x½	1¼x¾	1¼x1	1½x1¼	1½x⅜
Each	.70	.80	.85	.95	1.05	1.30	1.35	1.45	1.55	1.65	1.70	1.80	1.85

Size	1½x½	1½x¾	1½x1	1½x1¼	2x¼	2x⅜	2x½	2x¾	2x1	2x1¼	2x1½	2½x2
Each	1.90	2.00	2.10	2.25	2.30	2.40	2.50	2.75	2.90	3.05	3.25	3.90

The Nason Ammonia Valves and Fittings.

Tight Joint Pattern.



"T. J." TEE.

Straight Tees.

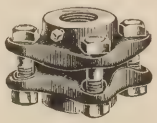
Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Each	.80	.90	1.05	1.25	1.70	2.20	2.50	3.40	5.40	6.50	7.50	9.10	12.50	16.25

Reducing Tees.

| | | |

The Nason Ammonia Valves and Fittings.

"Tight Joint" Pattern.



"T. J." FLANGE UNION.

Male and Female with Bolts and Gaskets.

Two Bolt.

Size	¼	⅜	½	¾	1
Each	2.75	3.00	3.25	3.40	4.25

Four Bolt.

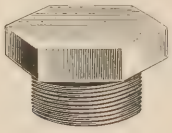
Size	½	¾	1	1¼	1½	2	2½
Each	3.30	3.50	4.35	5.00	6.60	7.60	9.70

Five Bolt.

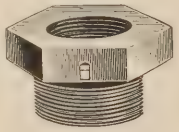
Size	3	3½	4
Each	10.90	14.80	16.40

Six Bolt.

Size	5	6
Each	19.50	22.25



"T. J." SOLID PLUG.



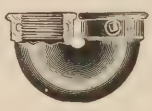
"T. J." BUSHING.

Solid Plugs.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	.15	.20	.20	.25	.30	.35	.45	.55	.70	1.00	1.25	1.50	2.00	2.50

Bushings.

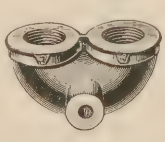
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	.60	.70	.75	.80	.95	1.10	1.30	1.60	1.80	2.40	3.15	3.75	5.00	5.75



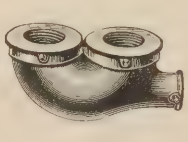
"T. J." RETURN BEND.

Return Bends—Right, and Right and Left.

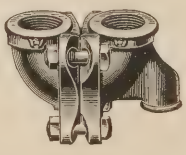
Size	½	¾	1	1	1¼	1¼	1¼	1½	1½	1½	1½
Center to Center	1¾	2	2⅜	3	3	4	6	3	3¼	4½	5½
Right Hand	1.10	1.30	1.75	2.00	2.25	2.50	2.90	2.60	2.70	2.90	3.10
Right and Left	1.25	1.40	2.00	2.15	2.50	2.75	3.25	2.85	3.00	3.15	3.40
Size	1½	1½	2	2	2	2	2	2	2	2	2½
Center to Center	6	8	3½	4	5½	6	10	12	15	8	
Right Hand	3.30	3.50	3.70	3.80	4.10	4.35	6.00	8.60	7.75	8.90	
Right and Left	3.60	3.80	3.90	4.10	4.50	4.75	----	----	----	----	



2 x 4 in. Return Bend 5.00
½ inch Side Drip



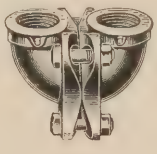
2 x 4 in. Return Bend 5.00
½ inch Bottom Drip



2 x 4 in. Return Bend .....
½ inch End Drip ... 5.00

2 x 3½ in. Flanged Return Bend (male and female) with bolts and gaskets 11.25

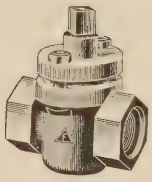
2 x 4 in. Flanged Return Bend (male and female) with bolts and gaskets 11.75



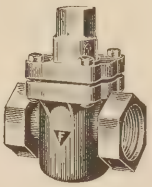
2 x 4 in. Flanged Return Bend (male and female) with bolts and gaskets, ½ inch End Drip 12.95

The Nason Ammonia Valves and Fittings.

Asbestos Disc Pattern.



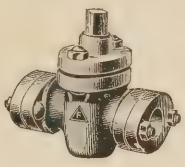
SCREWED ENDS.
Sizes ¼ to 2 inches.



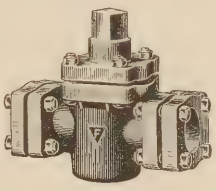
SCREWED ENDS.
Sizes 2½ to 4 inches.

Iron Ammonia Cocks, Vulcanized, Asbestos Packed. Screw and Counterbored Ends.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Each	1.40	1.50	1.60	2.10	2.50	3.50	4.75	7.00	12.00	18.00	27.00	30.00



GLAND ENDS.
Sizes ¼ to 2 inches.

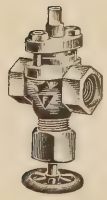


GLAND ENDS.
Sizes 2½ and 3 inches.

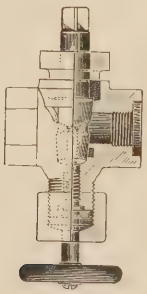
Iron Ammonia Cocks, Vulcanized, Asbestos Packed. Gland Ends.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each	2.10	2.25	2.45	3.10	3.65	4.75	6.10	8.65	15.50	23.00

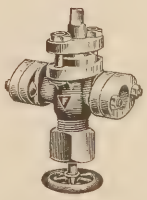
Iron Ammonia Expansion Cocks, Vulcanized, Asbestos Packed. Screw and Counterbored Ends and Gland Ends.



SCREW END.
Counterbored.



SECTION.



GLAND END.

Size	½	¾	1
Screw End	6.25	7.50	10.00
Gland End	7.10	8.50	11.15

The Nason Ammonia Valves and Fittings.



SCREWED ENDS.
COUNTERBORED.
2-in. and Smaller.

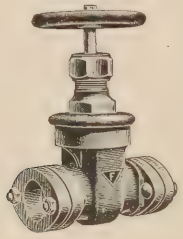
These Gate Valves are extra heavy, and designed for ammonia service. There is no joint above the bonnet joint. A soft metal gasket is spun in the groove in the bonnet, making a perfect joint with the body. The stuffing box is made extra deep. The metal seat rings are of a composition approved for use on ammonia. These rings are held against machined seats by semi-steel retaining rings, and all working parts are absolutely renewable. Valves are tested to 600 pounds hydraulic and 400 pounds air pressure, and are suitable for 300 pounds working ammonia pressure.



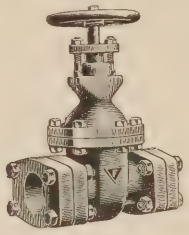
SCREWED ENDS.
BOLTED BONNET.
2½ and Larger.

Iron Ammonia Gate Valves—Screwed.

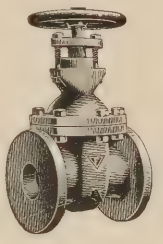
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Distance End to End	3 1/16	3 1/16	3 1/16	4 3/8	4 15/16	5 1/2	6	7	8 1/2	9 1/2	9 1/2	9 1/2
Depth of Counterbore	3/16	3/16	3/16	1/4	1/4	1/4	1/4	5/16	3/8	3/8	3/8	7/16
Diameter of Counterbore	29/32	1 3/32	1 9/32	1 15/32	1 27/32	2 1/32	2 13/32	2 31/32	3 17/32	4 9/16	5 1/32	5 17/32
Price	3.00	3.00	3.00	3.60	4.20	5.10	6.00	8.50	12.00	14.50	20.00	25.00



GLAND END.
1½-inch and Smaller.



GLAND END, BOLTED TOP.
2-inch and Larger.



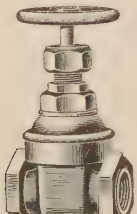
FLANGE ENDS.
BOLTED BONNET.

Iron Ammonia Gate Valves—Gland End.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Distance End to End of Body	3 3/16	3 3/16	3 3/16	4 1/2	5 1/16	5 3/4	6 3/8	7 1/4	8 3/8	10 1/8	10 1/8	10 1/8
Depth of Counterbore	3/8	1/4	1/4	5/16	5/16	3/8	7/16	7/16	9/16	11/16	3/4	3/4
Diameter of Counterbore	29/32	1 3/32	1 9/32	1 15/32	1 27/32	2 1/32	2 13/32	2 31/32	3 17/32	4 9/16	5 1/32	5 17/32
Price	4.00	4.00	4.00	4.80	5.55	6.60	7.65	10.45	16.20	20.50	27.00	34.00

Iron Ammonia Gate Valves—Flanged.

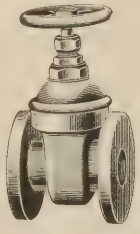
Size	2½	3	3½	4
Distance Face to Face	9½	10	10½	11
Diameter of Flanges	7½	8¼	9	10
Price	12.00	14.50	20.00	25.00



SCREW END GATE VALVE.

Iron Ammonia Gate Valves.

Chapman Pattern.



FLANGED END GATE VALVE.

All Iron Ammonia Gate Valves—Babbit Seat.

Screwed and Flanged, for Ordinary Pressure.

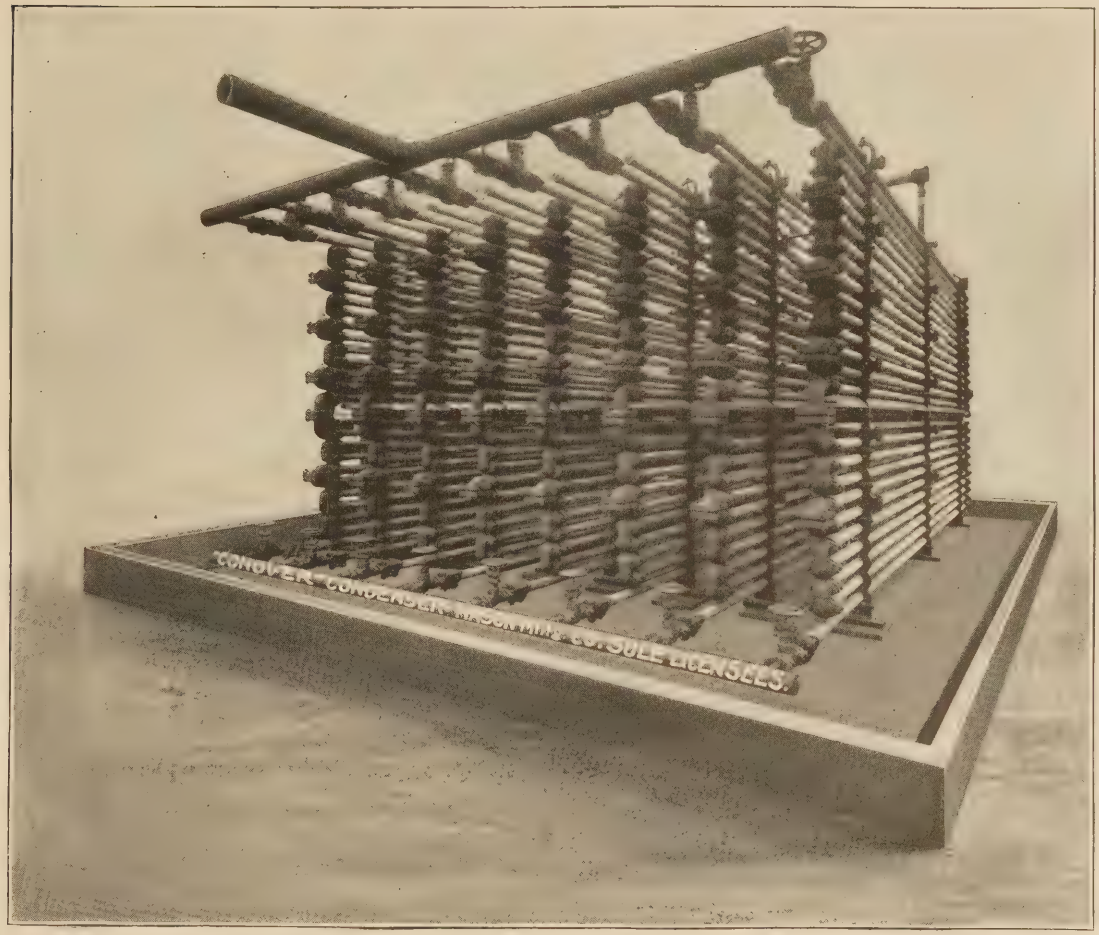
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	6	7	8
Screw End	3.00	3.00	3.25	3.65	4.35	5.00	6.10	7.85	11.10	15.50	18.60	21.50	40.00	48.00	58.00
Flange End	3.40	3.40	3.70	4.20	5.00	5.75	7.00	8.85	11.70	15.85	19.50	22.25	40.00	47.00	56.00

Screwed and Flanged, Extra Heavy, Tested to 1000 Pounds Pressure.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	6	7	8
Screw End	5.50	5.50	5.75	6.20	7.50	8.75	10.25	12.75	16.00	21.50	25.50	30.00	56.25	72.00	83.00
Plain Flanges	5.80	5.80	6.10	6.80	8.20	9.50	11.50	14.50	16.75	22.50	27.50	31.00	58.00	73.00	85.00
Tongued Flanges	----	----	----	----	8.60	10.00	12.00	15.00	18.00	24.00	29.00	32.75	59.50	75.00	87.00

The "Conover" Ammonia Condenser.

Patented October 2, 1900.



THE "CONOVER" AMMONIA CONDENSER—PATENTED.

In construction the sections of the Conover Condenser are made of return-bend coils arranged in pairs, one being placed above its companion with continuous downward gas flow through each. With this arrangement the upper row of coils is designed to do the work of "fore-cooling," leaving the lower bank to perform the actual work of condensation. Water is delivered on to the "fore-cooler" in the usual manner, reducing the gas temperature nearly to the point of liquefaction.

The distinctive novelty and valuable feature of this condenser is that the lower or condensing coils are furnished with a separate supply of cold water, instead of their being flooded as in older condenser forms with warm water from the upper row of coils. Mechanically this flow of cooling water is effected by placing a deflecting hood under each of the "fore-coolers" which effectually directs the stream away from the condensers below, and into the drip pan. Under each hood and above each condensing coil is its own supply pipe, from which cold water is delivered upon it in the same manner as to the "fore-coolers."

In effect this results in an ammonia condensing pressure during summer temperatures of only 155 pounds, instead of about 190 pounds, as was formerly necessary, giving a corresponding gain in fuel economy and wear and tear of compressor service, without any increase in the volume of cooling water. Incidentally, as the flow of gas is always downward, particles of liquid ammonia which separate from it during the act of condensation are carried along by the current as well as by gravitation to the bottom of the coils, where they unite with the main body of liquid, which is thus effectually driven down into the liquid receiver.

Lodgment of liquid ammonia in any part of the condenser is thus obviously impossible, and the entire coil surface for this reason is therefore operative, as the condenser is filled with gas only.

The regular standard stack of the Conover condenser is made of 2-inch pipe in lengths of 30 feet, and 24 pipes in height. Each stack of these dimensions is guaranteed to have a capacity of not less than 12½ tons of refrigeration in summer season, with proportionately increased effect in colder weather.

If necessary, to suit the conditions of building or surroundings, these dimensions may be varied in any particular, and the pipes are furnished either of special ammonia tubing, extra strong, and plain or galvanized as preferred. It is, however, preferable to adopt the standard dimensions given wherever practicable, as experiments have shown that the best results are thus obtained.

These condensers are shipped in sections of four pipes each, ready for erection, and quotation of price will commonly include "fore-coolers" with lower condensing coils, also coil stands, distributing pipes and hoods for water, inlet and outlet ammonia valves, and a proportionate part of top and bottom headers.

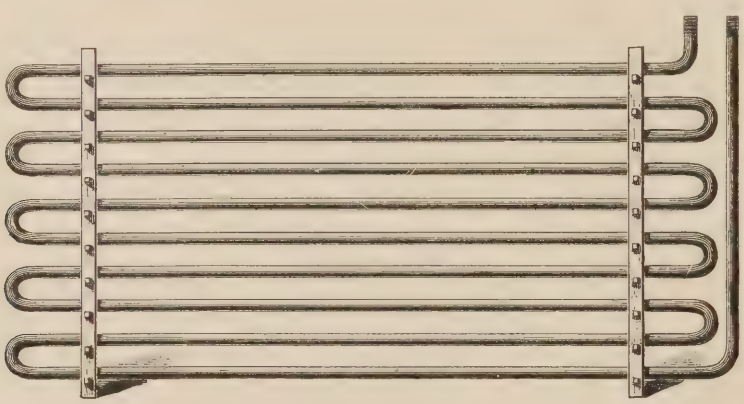
Other Ammonia Condensers.

Where preferred, condensers of older regular standard forms are built and shipped by us with all parts distinctly marked so that they can be erected with the least possible trouble and shortest time on the premises. These forms usually take the shape of the "Zig Zag," the "Flattened Oblong" or the Circular "Nested"—the latter being commonly used for marine service, or where available space is limited.

All condensers may be made either of the Air or Submerged type, and dimensions with particulars and price will be immediately furnished on application.

Expansion and Cooling Coils.

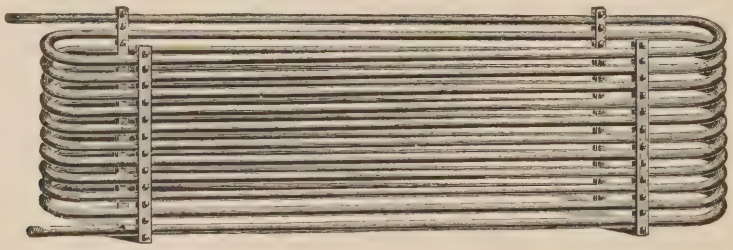
Where used in brine tanks, whether for ice-making or refrigeration, these are usually either of the Zig Zag or Oblong type as shown herewith.



ZIG ZAG COIL.

These are made of any height, length, or distance between centers called for, the minimum space of the last measurement being dependent upon the size of pipe.

Prices on Application.

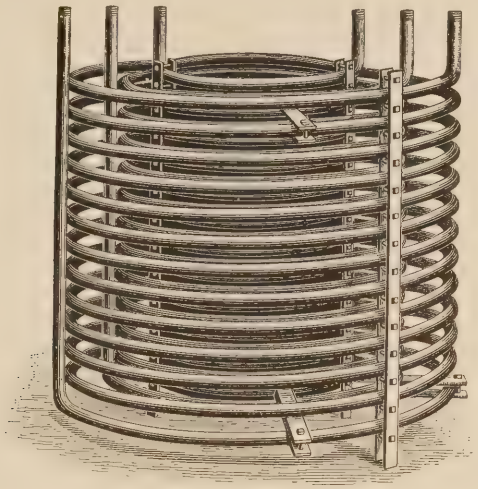


OBLONG COIL.

For ice-making service the accompanying Oblong type of coil is especially advised, owing to the close vertical distance permissible between pipe centers, which makes possible the assembling of a large amount of coil surface in any freezing tank. Horizontal distance between pipe centers is governed by dimensions of the freezing cans, which are dropped between the coils.

Prices on Application, with or without Headers.

Ammonia Condensers.



"NESTED" COILS.

Either for Condenser or Brine work. Their use is particularly advised for marine service, owing to their compactness and circular shape, which permits of their being encased in cylindrical closed tanks.

Quotations will be given either with or without tanks, as preferred.

The Hendrick Brine Cooler and Ammonia Condenser.



Our Brine Cooler consists of a heavy Cast-Iron Shell, standing upon columns, filled with Spiral Coils of extra heavy Pipe, the tails of which project through the heads of the Shell; the Liquid Anhydrous Ammonia is expanded in the Shell, entering at the Expansion Valve near the bottom of the Cooler, and leaving it after having performed its work, near the top, where the Suction Pipe leading to the Ammonia Compressor connects. The Brine is circulated through two or more Spiral Coils, welded continuously from end to end, entering at the top and leaving at the bottom of the Cooler.

As compared with the ordinary method of direct Ammonia Expansion in Coils submerged in the Brine Tank, we claim for it and are prepared to guarantee its ability to add from 10 to 25 per cent. to the working capacity of the Ammonia Compressor.

Our Ammonia Condenser consists of a heavy Cast Iron Shell, standing upright on a Channel Iron Frame; it contains two or more Continuous Spiral Coils of 1¼-inch Extra Heavy Pipe, the Tails of which project through the Heads of the Shell and are united by Manifolds. The Ammonia Gas is delivered into the Shell at the top, and as it becomes liquefied, under the influence of pressure and by contact with the Coils through which the Condensing Water is circulated, enters the lower ends of the Coil, and the Liquid Anhydrous Ammonia collects in the bottom of the Shell, thus constituting the Liquid Anhydrous Receiver, which is provided with a suitable liquid Level Gauge.

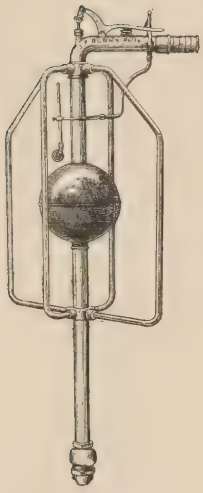
The water is subdivided into two or more separate streams, traveling through Coils which vary in length from 100 to 175 feet, according to the size of the Condenser. This gives a very much better utilization of cooling effect by the water than is obtained in the ordinary methods.

PRICE LIST OF COOLERS AND CONDENSERS.

Tons Refrigeration	2	3	4	5	6	8	10	12	15	20
List, each	225.00	250.00	300.00	325.00	400.00	500.00	625.00	705.00	825.00	1000.00
Tons Refrigeration	25	30	35	40	50	65	75	100	125	150	200
List, each	1175.00	1350.00	1575.00	1800.00	2250 00	2950.00	3350.00	4200.00	5000.00	6000.00	8000.00

Special Catalogue of these Coolers and Condensers furnished on application.

The Nason Ammonia Valves and Fittings.

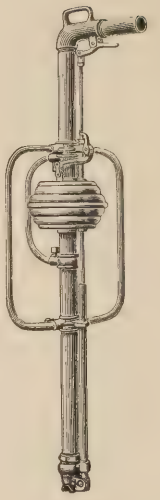


BURNS FILLER.

Automatic Ice Can Fillers.

The use of an Automatic Filler insures accurate and even filling of cans and uniformity in size and weight of ice blocks; prevents waste of distilled water and salt by overflow into the brine tank.

In ordering give all inside dimensions of cans at top and bottom, depth of can, distance from top of cans to top of covers, when same are in their proper position, inside diameter of hose and depth of water usually carried in cans.



SAULS FILLER.

The Burns Filler.

Furnished in all sizes from a 4-inch can upward.

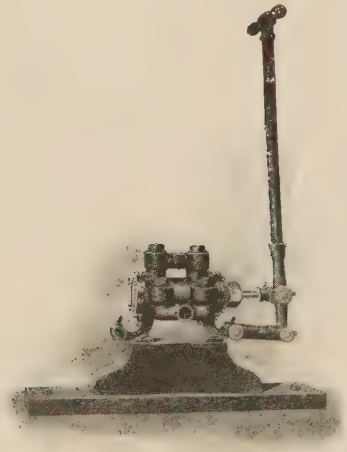
STANDARD SIZES.

For 100 and 200 lb. cans	$13.00
For 300 lb. cans	15.00
Nickelplated and polished, extra	3.00

Other Sizes Quoted on Application.

The Sauls Filler.

Each, Crated	$25.00



HAND-POWER AMMONIA PUMP.

Hand-Power Pump for Charging Absorption Ice Machines.

This Pump is made entirely of Cast and Wrought Iron, in order that it may be used for Ammonia and not be affected thereby as would a pump having brass parts. It is made with Caps over Suction and Discharge Checks, is double-acting, and ready for service when delivered. It has one-inch Suction, three-quarter-inch Discharge connections, and has a six-foot Suction and Discharge Hose and connections.

Pump complete with 6-foot suction hose and 6-foot discharge hose, ready for operation	$30.00

Iron Pipe Coils and Bends.



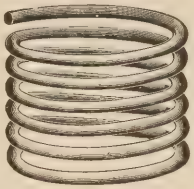
DOUBLE END HEATER COIL.



FRUSTRUM COIL.



DOUBLE CONE COIL.



SPIRAL COIL.



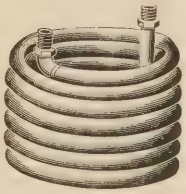
"U" COIL.



"S" COIL.



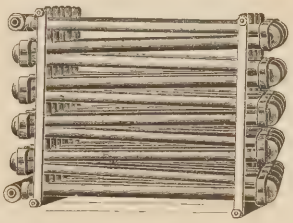
FLAT SPIRAL COIL.



HEATER COIL.



PIPE OFFSET BEND



BOX COIL.



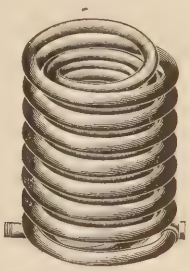
TUYERE COIL.



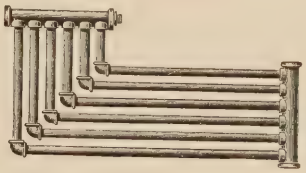
WALL COIL, PLAIN.



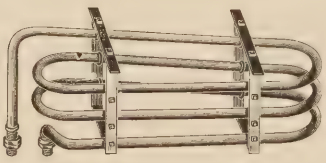
TANK COIL.



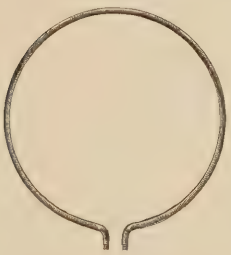
CONTINUOUS DOUBLE COIL.



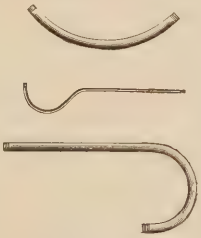
WALL OR MITER COIL.



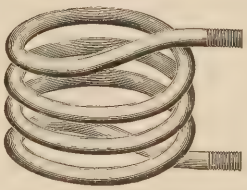
HORIZONTAL RANGE BOILER COIL.



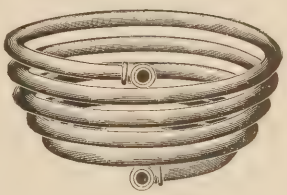
ATTEMPORATOR COIL.



ELECTRIC LIGHT BENDS.



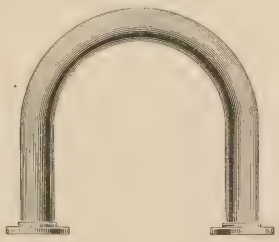
VERTICAL RANGE BOILER COIL.



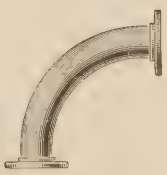
BASKET COIL.



STOVE COIL.



PIPE BEND FLANGED.



PIPE ELBOW, FLANGED.

NOTE.—Prices for above, or any other design of coil will be quoted on specification.

Malleable Iron Fittings.

Classification and Price List, Malleable Iron, Gas, Water and Steam Fittings.

PRICE LIST.

Class	A	B	C	D	E
Price, per pound, Black	.40	.20	.16	.13	.11
" " Galvanized	.50	.27	.23	.20	.18

Class A.....Price, 40 cents per pound.

Elbows, 1/8, 1/4 x 1/8, 3/8 x 1/8.
Tees, 1/8, 1/8 x 1/4, 1/4 x 1/8, 3/8 x 1/8.
Reducers, 1/4 x 1/8, 3/8 x 1/8.
R. and L. Couplings, 1/8 in.
Couplings, R. H., 1/8 in.
Ells, R. and L., 1/4 and 3/8 in.
R. and L. Return Bends, 3/8 and 1/2 in.

Class B.....Price, 20 cents per pound.

Elbows, 3/8, 1/4, 3/8 x 1/4, 1/2 x 1/4 in.
Tees, 1/4, 3/8, 1/4 x 3/8, 3/8 x 1/4 x 1/4, 3/8 x 1/4, 3/8 x 1/4 x 3/8.
Elbows, Side Outlets, 1/2 in. and smaller.
Tees, Side Outlets, 1/2 in. and smaller.
Street Ells, 1/4 and 3/8 in.
Crosses, 1/4, 3/8, 1/2 in.
Reducing Crosses, 1 in. and smaller.
Drop Ells and Tees, 1/2 in. and smaller.
Caps, 1/4 and 3/8 in.
Lock Nuts, 1/4, 3/8 and 1/2 in.
Reducing Couplings, 3/8 x 1/4 to 3/4 x 3/8, inclusive.
Extension Pieces, 3/8 and 1/2 in.
R. and L. Couplings, 1/4 and 3/8 in.
R. Hand Couplings, 1/4 and 3/8 in.
R. and L. Elbows, 1/2 in.
Waste Nuts, 3/4 in. and smaller.
Chandelier Hooks, all sizes.
Return Bends, 3/8 and 1/2 in.
Return Bends, R. and L., 3/4, 1 in.
Wall Plates, all sizes.
45° Ells, 1/2 in. and smaller.
Y's, 1/2, 3/4 in.

Class C.....Price, 16 cents per pound.

Elbows, 1/2 and 1/2 x 3/8.
Elbows, R. and L., 3/4, 1 in.
Tees, 1/2 and 1/2 in. reducing.
Elbows, Side Outlets, 3/4 in. and larger.
Tees, Side Outlets, 3/4 in. and larger.
Street Ells, 1/2, 3/4, 3/4 x 1/2, 1 x 3/4 in.
Crosses, 1 and 3/4 in., straight.
Drop Ells, 3/4 in. and larger.
Drop Tees, 3/4 in. and larger.
Caps, 1/2, 3/4 and 1 in.
Lock Nuts, 3/4, 1, 1 1/4 in.
Reducing Couplings, 3/4 x 1/2 to 1 in., inclusive.
R. and L. Couplings, 1/2, 3/4 in.
R. H. Couplings, 1/2, 3/4 in.
Extension Pieces, 3/4 in. and larger.
Waste Nuts, 1 in. and larger.
Return Bends, 3/4, 1 in.
45° Ells, 3/4 to 2 in., inclusive.
Y's, 1 in. and larger.
Return Bends, R. and L., 1 1/4 in. and larger.

Class D.....Price, 13 cents per pound.

Elbows and Tees, 3/4 and 1 in.
Crosses, 1 1/4 in. and larger.
Street Ells, 1 in. and larger.
Caps, 1 1/4 in. and larger.
R. and L. Elbows, 1 1/4 in. and larger.
Lock Nuts, 1 1/2 in. and larger.
Reducing Couplings, 1 1/4 in. and larger.
R. H. Couplings, 1 and 1 1/4 in.
Return Bends, 1 1/4 in. and larger.
R. and L. Couplings, 1 in. and larger.
45° Elbows, 2 1/2 in. and larger.

Such Fittings as have smaller outlets than 3/4 inch will be classed "C."

Class E.....Price, 11 cents per pound.

Elbows and Tees, 1 1/4 in. and larger. Right Hand Couplings, 1 1/2, 2 in. Such Fittings in this class that have outlets smaller than 1 inch to be classed "D."

The run of Tees (Bullheads) gives the size for the purpose of classification, and the outlet being larger does not change it.

Return Bends, reduced, Return Bends, spread, Elbows tapped on pitch.....15 per cent. added.

Malleable Fittings.

List of Sizes and Weights of Malleable Fittings.

Elbows.

NOTE—Weights on this and following pages are only approximate and not guaranteed.



ELBOW.
PLAIN, FOR GAS.

Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
1/8	8	----
1/4 x 1/8	7 1/2	----
1/4	8 1/2	10
3/8 x 1/8	14 1/2	----
3/8 x 1/4	14	16
3/8	15	16
1/2 x 1/4	22 1/2	----
1/2 x 3/8	19 1/2	25 1/2
1/2	22	23 1/2
3/4 x 3/8	31	----
3/4 x 1/2	35	40 1/2
3/4	33 1/2	39
1 x 1/2	47 1/2	59
1 x 3/4	45	61 1/2
1	42 1/2	63
1 1/4 x 3/4	83	104 1/2
1 1/4 x 1	88 1/2	97 1/2
1 1/4	76	99
1 1/2 x 3/4	102 1/2	167
1 1/2 x 1	94 1/2	148 1/2
1 1/2 x 1 1/4	101	145
1 1/2	105	143
2 x 1 1/4	176	225
2 x 1	----	215
2 x 1 1/2	169	240
2	169 1/2	214
2 1/2 x 1 1/2	----	388
2 1/2 x 2	---	344
2 1/2	----	407
3 x 2	----	438
3 x 2 1/2	----	551
3	----	620
3 1/2 x 3	----	1200
3 1/2	----	1000
4 x 3 1/2	----	1250
4	----	1506



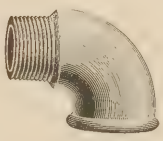
ELBOW.
BEADED, FOR STEAM.



45° ELBOW.

45° Elbows.

Size.	Weight, Beaded. Lbs. per 100.	Size.	Weight, Beaded. Lbs. per 100.
3/8	12 1/2	1 1/4	83 1/2
1/2	16 1/2	1 1/2	118
3/4	31	2	170
1	49	2 1/2	



STREET ELBOW.

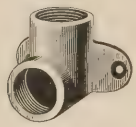
Street Elbows.

Size.	Weight, Beaded. Lbs. per 100.	Size.	Weight, Beaded. Lbs. per 100.
3/8	16	1 1/4 x 1	107
1/2	26	1 1/4	114
3/4 x 1/2	44	1 1/2 x 1 1/4	153
3/4	47	1 1/2	158
1 x 3/4	72	2 x 1 1/2	220
1	73	2	260

Malleable Fittings.



SIDE OUTLET ELBOW.



DROP ELBOW.



EXTENSION PIECE.
Male and Female.

Side Outlet Elbows.

Size.	Weight, Plain. Lbs. per 100.
3/8 x 3/8 x 1/4	12
3/8 x 3/8 x 3/8	16
1/2 x 1/2 x 3/8	19½
1/2 x 1/2 x 1/2	29
3/4 x 3/4 x 3/8	37
3/4 x 3/4 x 1/2	38
3/4 x 3/4 x 3/4	40

Size.	Weight, Plain. Lbs. per 100.
1 x 1 x 3/8	48
1 x 1 x 1/2	49½
1 x 1 x 3/4	51½
1 x 1 x 1	55½
1¼ x 1¼ x 1	87
1¼ x 1¼ x 1¼	91½

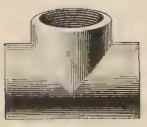
Smallest opening is always the side opening.

Drop Elbows—Female.

Size.	Weight, Plain. Lbs. per 100.
1/4 x 1/4	13
3/8 x 1/4	22
3/8 x 3/8	19
1/2 x 3/8	27

Size.	Weight, Plain. Lbs. per 100.
1/2 x 1/2	27
3/4 x 1/2	40½
3/4 x 3/4	41½
1 x 1	----

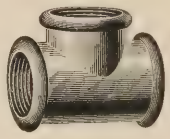
Extension Pieces—Male and Female.



PLAIN FOR GAS.

Size.	Weight. Lbs. per 100.
3/8 x 3/8	9½
1/2 x 1/2	15

Size.	Weight. Lbs. per 100.
3/4 x 3/4	22½
1 x 1	32½



BEADED FOR STEAM.

Tees.

Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
1/8	9	----
1/8 x 1/4	8	----
1/4 x 1/8	9½	----
1/4	12	14½
1/4 x 3/8	16	----
3/8 x 1/4 x 1/4	15	----
3/8 x 1/4 x 3/8	18½	----
3/8 x 1/8	16	----
3/8 x 1/4	15	----
3/8	16½	17
3/8 x 1/2	24	----
3/8 x 3/4	27	----
3/8 x 1	----	----
1/2 x 1/4 x 1/4	18½	----
1/2 x 1/4 x 1/2	22	----
1/2 x 3/8 x 1/4	20	----
1/2 x 3/8 x 3/8	24½	----
1/2 x 3/8 x 1/2	26½	----
1/2 x 3/8 x 3/4	32½	----
1/2 x 1/4	21	----
1/2 x 3/8	21¾	22½
1/2	26	32
1/2 x 3/4	29½	33½
1/2 x 1	34½	----
1/2 x 1¼	75	----
3/4 x 3/4 x 3/4	29	----
3/4 x 3/8 x 1/2	35½	----
3/4 x 3/8 x 3/4	30½	----
3/4 x 3/8 x 1	50	----
3/4 x 1/2 x 1/4	33	----
3/4 x 1/2 x 3/8	29	----
3/4 x 1/2 x 1/2	34	38½
3/4 x 1/2 x 3/4	38	49½
3/4 x 1/2 x 1	50½	----
3/4 x 1/4	29½	----
3/4 x 3/8	30½	42

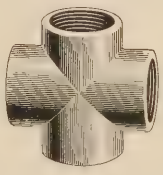
Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
3/4 x 1/2	34	52
3/4	41	49
3/4 x 1	34	59½
3/4 x 1¼	64	----
3/4 x 1½	69	----
1 x 3/8 x 1/2	44½	----
1 x 3/8 x 3/4	47½	----
1 x 3/8 x 1	54	----
1 x 3/8 x 1¼	67½	----
1 x 1/2 x 3/8	37½	----
1 x 1/2 x 1/2	42	52
1 x 1/2 x 3/4	40½	----
1 x 1/4 x 1	----	----
1 x 1/2 x 1	48	----
1 x 1/2 x 1¼	68	----
1 x 3/4 x 3/8	39½	54
1 x 3/4 x 1/2	44	58
1 x 3/4 x 3/4	38	65
1 x 3/4 x 1	49	78
1 x 3/4 x 1¼	67½	----
1 x 1/4	37	44
1 x 3/8	35	47
1 x 1/2	41½	44
1 x 3/4	50½	68½
1	53	75
1 x 1¼	60½	96½
1 x 1½	109	----
1¼ x 3/8 x 1	83	----
1¼ x 3/8 x 1¼	89	----
1¼ x 1/2 x 1	83	----
1¼ x 1/2 x 1¼	94	----
1¼ x 3/4 x 3/4	67	86
1¼ x 3/4 x 1	72	----
1¼ x 3/4 x 1¼	89	124
1¼ x 1 x 3/8	56	----
1¼ x 1 x 1/2	47	----

Malleable Fittings.

Tees.

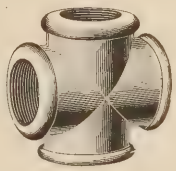
Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
1¼ x 1 x ¾	65	92
1¼ x 1 x 1	74	103
1¼ x 1 x 1¼	92	132
1¼ x 1 x 1½	109	----
1¼ x ⅜	63	89
1¼ x ½	66	89
1¼ x ¾	71	96
1¼ x 1	80	111
1¼	90	115
1¼ x 1½	89	102
1¼ x 2	----	206
1½ x ½ x 1	91	----
1½ x ½ x 1¼	113½	----
1½ x ¾ x 1¼	90	----
1½ x ¾ x 1½	114	176
1½ x 1 x ¾	81	----
1½ x 1 x 1	91	----
1½ x 1 x 1¼	94	----
1½ x 1 x 1½	109	183
1½ x 1¼ x ¾	82	----
1½ x 1¼ x 1	91	139
1½ x 1¼ x 1¼	96	164
1½ x 1¼ x 1½	110	174
1½ x ⅜	85	114½
1½ x ½	77½	85½
1½ x ¾	91½	120½
1½ x 1	102	150
1½ x 1¼	102	155
1½	126	171
1½ x 2	131½	212
2 x ½ x 2	250	273
2 x ¾ x 2	203	267
2 x 1 x 2	221	273

Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
2 x 1¼ x 1¼	172	203
2 x 1¼ x 1½	146	232
2 x 1¼ x 2	203	270
2 x 1½ x 1¼	155	208
2 x 1½ x 1½	169	210
2 x 1½ x 2	214	264
2 x ⅜	118	124
2 x ½	120	163
2 x ¾	107	165
2 x 1	130	175
2 x 1¼	152	219
2 x 1½	154	217
2	197	262
2 x 2½	----	350
2½ x 1	----	350
2½ x 1¼	----	300
2½ x 1½	----	300
2½ x 2	----	350
2½	----	500
	----	
3 x 1¼	----	450
3 x 1½	----	450
3 x 2	----	500
3 x 2½	----	650
3	----	750
3½ x 2½	----	700
3½ x 3	----	850
3½	----	1300
4 x 2	----	1000
4 x 2½	----	1100
4 x 3	----	1200
4 x 3½	----	1300
4	----	1450



PLAIN FOR GAS.

Crosses.



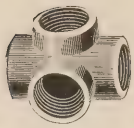
BEADED FOR STEAM.

Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
¼	13½	----
⅜ x ¼	16	----
⅜	19½	----
½ x ⅜ x ¼	22	----
½ x ⅜ x ⅜	23½	----
½ x ⅜ x ½	25	----
½ x ¼	13½	----
½ x ⅜	23½	----
½	29½	33½
¾ x ⅜ x ½	34½	----
¾ x ½ x ⅜	26	----
¾ x ½ x ½	36½	----
¾ x ⅜	32	34
¾ x ½	38½	39
¾	37½	39
1 x ½ x ⅜	37	----
1 x ¾ x ⅜	39	----
1 x ¾ x ½	50½	----
1 x ¾ x ¾	54½	----
1 x ⅜	42	46
1 x ½	32	49
1 x ¾	37	58
1	59	79
1¼ x 1 x ¾	73½	----
1¼ x 1 x 1	83	----
1¼ x ⅜	65	74

Size.	Weight, Plain. Lbs. per 100.	Weight, Beaded. Lbs. per 100.
1¼ x ½	71½	69
1¼ x ¾	86	71½
1¼ x 1	92	85
1¼	100	115
1½ x 1¼ x 1¼	92	----
1½ x ⅜	85	----
1½ x ½	87	94
1½ x ¾	108	138
1½ x 1	100	167½
1½ x 1¼	121	155
1½	142	157
2 x ½	101	200
2 x ¾	122	198
2 x 1	118	215
2 x 1¼	162	210
2 x 1½	149	236
2	218	300
2½ x 1½	----	350
2½ x 2	----	400
2½	----	550
3 x 2	----	600
3 x 2½	----	800
3	----	888
3½	----	950
4	----	1600
----	----	----

Malleable Fittings.

Side Outlet Tees.



SIDE OUTLET TEE.

Size.	Weight, Plain. Lbs. per 100.	Size.	Weight, Plain. Lbs. per 100.
1/2	281/2	1	561/2
3/4	46	1 1/4	102

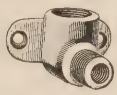


Y.

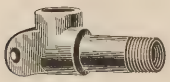
Malleable Y's.

Size.	Weight, Beaded. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/2	----	1 1/2	275
3/4	----	2	437
1	113	2 1/2	----
1 1/4	187	3	1000

Drop Elbows.



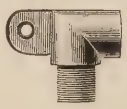
DROP ELBOW.



LONG DROP ELBOW.



FLANGE, RIGHT SIDE.



FLANGE, LEFT SIDE.

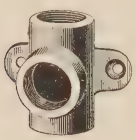
Drop Elbows—Male and Female.

Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/8 x 3/8	12	3/8 x 3/8	21
1/4 x 3/8	16 1/2	1/2 x 3/8	25 1/2
3/8 x 3/8 long Drop.	26	1/4 x 3/8	16

Drop Elbows—With Flange.

Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/4 x 3/8	14 1/2	1/4 x 3/8	13 1/2
3/8 x 3/8	20 1/4	3/8 x 3/8	20 1/4

Drop Tees.



DROP TEE.
Female.



DROP TEE.
Male and Female.

Drop Tees—Female.

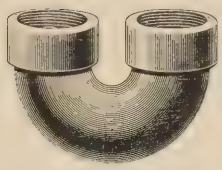
Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/4 x 1/4 x 1/4	15 1/2	1/2 x 1/2 x 3/8	16	3/4 x 3/4 x 1/2	42
3/8 x 1/4 x 1/4	20 1/2	1/2 x 1/2 x 1/2	33	3/4 x 3/4 x 3/4	49 1/2
3/8 x 3/8 x 1/4	21	3/4 x 1/2 x 1/4	31	1 x 3/4 x 3/8	46
3/8 x 3/8 x 3/8	16	3/4 x 1/2 x 3/8	37 1/2	1 x 1 x 3/8	43
1/2 x 3/8 x 1/4	21	3/4 x 3/4 x 1/4	35	1 x 1 x 1/2	58
1/2 x 3/8 x 3/8	27	3/4 x 3/4 x 3/8	34	1 x 1 x 3/4	63
1/2 x 1/2 x 1/4	26 1/2	----------	----	----------	----

The smallest size is the size of drop.

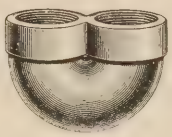
Drop Tees—Male and Female.

Size.	Weight. Lbs. per 100.	Size	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/4 x 1/4 x 3/8	17	1/2 x 1/2 x 3/8	26	1 x 3/4 x 3/8	44
3/8 x 1/4 x 3/8	14 1/2	3/4 x 1/2 x 3/8	33	1 x 1 x 3/8	37
				With drop 2 1/2 long.	
3/8 x 3/8 x 3/8	18 1/2	3/4 x 3/4 x 3/8	36	3/8 x 3/8 x 3/8	25 1/2
1/2 x 3/8 x 3/8	18 1/4	----------	----	----------	----

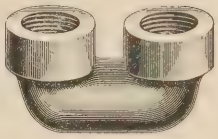
Malleable Fittings.



OPEN PATTERN, BANDED.



CLOSE PATTERN, BANDED.



SQUARE PATTERN, BANDED.

Return Bends.

Open Pattern, Banded.

Size	½	¾	1	1¼	1½	2	2½
Center to Center, inches	1⅝	2	2⅜	2⅞	3¼	4	4¾
Pounds per 100	35	104	134	202½	251	454	832

Close Pattern, Banded.

Size	⅜	½	¾	1	1¼	1½	2	2½	3
Center to Center, inches	⅞	1⅛	1⅜	1¾	2⅛	2½	2¾	3⅜	4½
Pounds per 100	20	35	67	100	164	245	395	625	850

Square Pattern, Banded.

Size	⅜	½	¾	1	1¼	1½	2
Center to Center, inches	1⅛	1½	2	2½	3	3½	4½
Pounds per 100	25	45	72	122	190	243	450



OPEN PATTERN, BEADED.



MEDIUM PATTERN, BEADED.



CLOSE PATTERN, PLAIN.

Open Pattern, Beaded.

Size	½	¾	1	1¼	1½	2	2½
Center to Center, inches	1½	2	2½	3	3½	4	4½
Pounds per 100	35	104	134	202½	251	454	832

Medium Pattern, Beaded.

Size	½	¾	1	1¼	1½	2
Center to Center, inches	1¼	1⅝	1⅞	2¼	2⅝	3⅛
Pounds per 100	37	55½	92½	163	244	328½

Close Pattern, Plain.

Size	½	¾	1	1¼	1½	2	3
Center to Center, inches	1⅝	1⅞	1½	1¾	2⅛	2⅝	4
Pounds per 100	30½	54	88	152	228	333	400



CAPS.

Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
¼	5⅛	1½	70	¼	4½	1	25
⅜	8	2	97	⅜	7	1¼	49
½	11½	2½	219	½	12	1½	58½
¾	19	3	350	¾	18	2	89
1	30	3½	575				
1¼	40	4	782				



PLUGS.

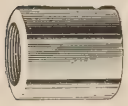


Reducing Couplings.

Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
¼ x ⅛	6½	1¼ x 1	53	2½ x 1½	250
⅜ x ⅛	9	1½ x ⅜	----	2½ x 2	213
⅜ x ¼	7½	1½ x ½	68	3 x 1	325
½ x ¼	12	1½ x ¾	69	3 x 1¼	338
½ x ⅜	14	1½ x 1	59	3 x 1½	350
¾ x ¼	21	1½ x 1¼	70	3 x 2	320
¾ x ⅜	21	2 x ⅜	85	3 x 2½	325
¾ x ½	22	2 x ½	90	3½ x 1½	513
1 x ¼	33	2 x ¾	102	3½ x 2	538
1 x ⅜	33	2 x 1	125½	3½ x 2½	----
1 x ½	36	2 x 1¼	91	3½ x 3	545
1 x ¾	31	2 x 1½	108½	4 x 2	650
1¼ x ⅜	54½	2½ x ¾	225	4 x 2½	700
1¼ x ½	53	2½ x 1	182	4 x 3	650
1¾ x ¼	47	2½ x 1¼	225	4 x 3½	682

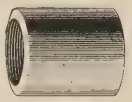
Malleable Fittings.

Reducing Couplings.



COUPLINGS, RIGHT AND LEFT.

Size.	Weight Lbs per 100.	Size.	Weight. Lbs. per 100.
1/4	9	1	50 1/2
3/8	13	1 1/4	72
1/2	17 1/2	1 1/2	106
3/4	29	2	152



COUPLINGS, RIGHT HAND.

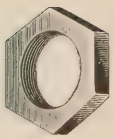
Size.	Weight. Lbs. per 100.	Size.	Weight Lbs. per 100.
1/8	4 1/4	1 1/2	80
1/4	7	2	127
3/8	10 1/2	2 1/2	----
1/2	17	3	----
3/4	25	3 1/2	----
1	40 1/2	4	675
1 1/4	53	----	----



PUMP ROD COUPLING.

Size	3/8	3/8 x 7/16	7/16	1/2
Number of Threads to Inch	16	16 x 14	14	12
Price, Malleable Iron (per pound), Black	.25	.30	.25	.25
" " " Galvanized	.35	.40	.35	.35

Locknuts.

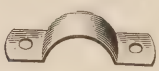


Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/4	3	1 1/4	27
3/8	5 1/2	1 1/2	34
1/2	7 1/2	2	48 1/4
5/8	----	2 1/2	107
3/4	11 1/2	3	139
1	19		



WALL PLATE.

Size.	Approximate Weight per 100.
3/8	14



MALLEABLE STRAPS.

Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/4	2	3/4	9 7/8
3/8	2 1/2	1	13 1/4
1/2	4 5/8	1 1/4	18



WASTE NUTS, PLAIN OR TINNED.

Size.	Weight. Lbs. per 100.	Size.	Weight. Lbs. per 100.
1/4	3 1/2	3/4	9 7/8
3/8	6	1	13 1/4
1/2	7 3/4	----	----



CHANDELIER LOOPS.

Size.	Weight. Lbs. per 100.
3/8	16 5/8
1/2	20 1/2



CHANDELIER HOOKS—Male.

Size.	Weight. Lbs. per 100.
3/8	19
1/2	22 5/8



CHANDELIER HOOKS—Female.

Size.	Weight. Lbs. per 100.
3/8	20
1/2	21 1/2



WASTE NUTS, PLAIN.

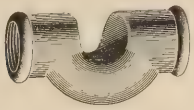
Size.	Weight. Lbs. per 100.
1/4	7
3/8	7 1/2



GAS COCK WRENCHES.

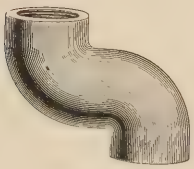
No	0	1	2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	10	11	12
Size Nut	8/32	11/32	12/32	15/32	17/32	20/32	22/32	23/32	24/32	26/32	28/32	30/32	1 1/32	1 3/32	1 6/32	1 10/32	1 16/32	1 23/32	1 27/32

Cross-overs, Offsets, Wash-Tray Fittings, Etc.



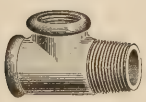
MALLEABLE IRON GALVANIZED CROSS-OVERS.

Tapped	½	inch to cross	½	-inch pipe, each				.22
"	½	"	"	¾	"	"	"	.35
"	½	"	"	1	"	"	"	.45
"	½	"	"	1¼	"	"	"	.60
"	¾	"	"	¾	"	"	"	.32
"	¾	"	"	1	"	"	"	.50
"	¾	"	"	1¼	"	"	"	.62
"	1	"	"	1	"	"	"	.49
"	1	"	"	1¼	"	"	"	.68



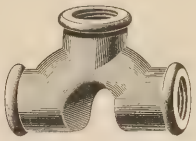
OFFSET.

Size.	Center to Center.	Pounds per 100 Pieces.
¾	1½	65
¾	2⅛	70
1	1¾	90
1	2¾	110



SERVICE TEE. 2 x 1¼ x 2.

Size.	Class.	Lbs. per 100.
⅜ x ⅜ x ⅜	B.	---
¾ x ¾ x ¾	C.	50
1 x 1 x ¾	C.	---
1 x ¾ x 1	C.	---
1 x 1 x 1	D.	80
1¼ x ¾ x 1¼	D.	120
1¼ x 1 x 1¼	D.	120
1¼ x 1¼ x 1¼	D.	131
1½ x 1¼ x 1½	D.	---
1½ x 1½ x 1½	D.	---
2 x 1 x 2	D.	300
2 x 1¼ x 2	D.	300
2 x 1½ x 2	D.	305
2 x 2 x 2	D.	320
2½ x 2 x 2½	D.	460
2½ x 2½ x 2½	D.	500
3 x 2½ x 3	D.	750
3 x 3 x 3	D.	850



MALLEABLE IRON GALVANIZED CROSS-OVER WITH BACK OUTLET.

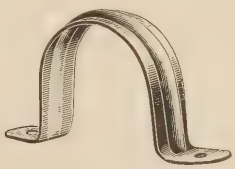
Back Outlet same size as Run.

Tapped	½	inch to cross	½	-inch pipe, each				.26
"	¾	"	"	¾	"	"	"	.39
"	1	"	"	1	"	"	"	.60



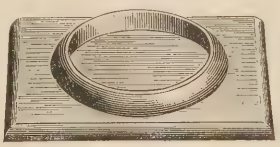
MALLEABLE IRON GALVANIZED CROSS-OVER TEE.

Size,	½	inch to cross	½	-inch pipe, each				.38
"	¾	"	"	¾	"	"	"	.56
"	1	"	"	1	"	"	"	.86



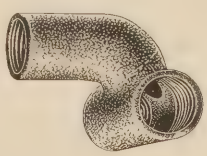
TIN PIPE STRAP.

Sizes	¼	⅜	½	¾	1	1¼	1½	2
Price per pound	.25	.25	.25	.25	.25	.25	.25	.25



COLUMN PLATE.

Prices on Column Plate and Pipe Columns quoted on specification.



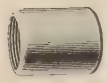
MALLEABLE IRON GALVANIZED WASH TRAY SUPPLY FITTING.

Adopted by modern sanitary plumbers throughout the country.

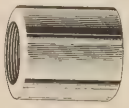
No. Outlets	½	¾	½ x ¾
1. Standard length, each	.20	.30	.30
2. Extra long, each	.25	.35	.35

We furnish Standard length fittings unless otherwise specified.

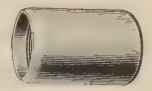
Couplings and Unions.



WROUGHT IRON COUPLING.



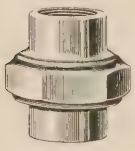
RIGHT AND LEFT COUPLING.



PATENT DRIVE PIPE COUPLING.

Wrought Iron and Drive Pipe Couplings.

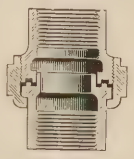
Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Couplings, Plain	.05	.05	.06	.07	.10	.13	.17	.21	.28	.40	.60	.80	1.00	1.50	1.65	2.40	3.25	4.25	5.50	7.50	10.00
" R. and L.	.07	.08	.11	.15	.20	.25	.30	.50	.85	1.20	1.60	2.00									
" Galvanized	.06	.08	.10	.13	.18	.25	.32	.40	.55	.80	1.05	1.40	2.00	2.25	3.25						
" Drive Pipe				.10	.12	.15	.25	.30	.40	.60	.80	1.30	1.50	2.00	2.40	2.80	3.85	4.00	5.00	6.00	8.00



MALLEABLE UNION.



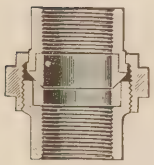
AMERICAN UNION.



SECTION AMERICAN UNION.

Malleable and American Unions.

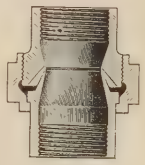
Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Malleable Union, Plain	.18	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35
" " Galvanized	.27	.27	.30	.33	.40	.50	.70	.90	1.15	2.35	3.15	5.50	6.50
American " Plain		.20	.24	.28	.35	.40	.56	.80	.95	2.00	2.75		
" " Galvanized		.24	.28	.35	.46	.55	.78	1.12	1.35	2.90	3.75		



DART UNION, Malleable, Gun Metal Ground Seat.

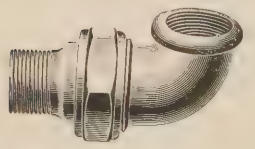
Dart and Keystone Unions.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Dart Union, Plain	.30	.40	.50	.60	.80	1.20	1.60	2.00	3.20	4.80
" " Galvanized	.45	.60	.75	.90	1.20	1.80	2.40	3.00	4.80	6.20
Keystone Union, Plain	.20	.24	.28	.35	.40	.56	.80	.95	2.00	2.75
" " Galv.	.24	.28	.35	.46	.55	.78	1.12	1.35	2.90	3.75



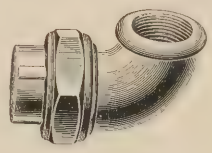
KEYSTONE UNION, Soft Metal Seat.

Malleable Union Elbows.



MALE AND FEMALE.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Male and Female, Plain	.48	.62	.72	1.05	1.20	1.80	3.30
" " " Galvanized	.72	.93	1.08	1.60	1.80	2.70	4.95
Female, Plain	.42	.54	.63	.90	1.05	1.55	2.85
" Galvanized	.63	.81	.95	1.35	1.58	2.35	4.30



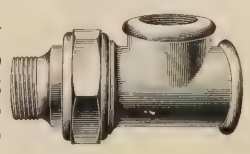
FEMALE UNION.

Malleable Union Tees.



MALE AND FEMALE.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Male and Female, Plain	.52	.65	.80	1.10	1.30	1.95	3.70
" " " Galvanized	.78	1.00	1.20	1.65	1.95	2.95	5.55
Female, Plain	.45	.57	.70	.95	1.15	1.70	3.20
" Galvanized	.68	.86	1.05	1.45	1.75	2.55	4.80



FEMALE UNION.

Sprinkler Heads, Clips and Saddles.



ESTEY SPRINKLER HEAD.
Each..... 1.00

In ordering state temperature at which metal is to fuse.



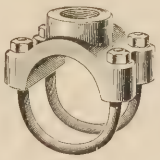
WALWORTH SPRINKLER HEAD.
Each 1.00

Sprinkler Clips.



SPRINKLER CLIP.

Size	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Short, each	.09	.09	.10	.11	.13	.15	.18	.19	.20	.23	.23	.25
Medium "	.09	.09	.10	.11	.13	.15	.18	.19	.20	.23	.23	.25
Long "	.12	.12	.13	.15	.17	.20	.25	.28	.29	.32	.32	.35



Malleable Iron Saddles.

Size for 2	inch Pipe, Tapped for	1	inch to	1½	inch opening, each		1.00
" 3	" "	" 1	"	2	" "		1.00
" 4	" "	" 1	"	2	" "		1.25
" 4¼	" Casing,	" 1	"	2	" "		2.00
" 4½	" "	" 1	"	2	" "		2.25
" 4½	" Pipe,	" 1	"	2	" "		2.50
" 5	" "	" 1	"	2	" "		2.75
" 5⅝	" Casing,	" 1	"	2	" "		2.75
" 5⅝	" "	" 2½	"	4	" "		5.50
" 6	" Pipe,	" 1	"	2	" "		2.50
" 6	" "	" 2½	"	4	" "		5.75
" 6¼	" Casing,	" 1	"	2	" "		3.00
" 6¼	" "	" 2½	"	4	" "		5.75
" 7⅝	" "	" 1	"	2	" "		4.50
" 7⅝	" "	" 2½	"	4	" "		6.50
" 8	" Pipe,	" 1	"	2	" "		4.50
" 8	" "	" 2½	"	4	" "		6.50
" 8¼	" Casing,	" 1	"	2	" "		5.00
" 8¼	" "	" 2½	"	4	" "		6.50
" 10	" Pipe,	" 1	"	2	" "		5.50
" 10	" "	" 2½	"	4	" "		6.75
" 12	" "	" 1	"	2	" "		6.25
" 12	" "	" 2½	"	4	" "		8.75

Wrought Iron Saddles.

Size for 2	inch Pipe, Tapped for	1	inch to	1½	inch opening, each		1.00
" 2½	" "	" 1	"	1½	" "		1.50
" 3	" "	" 1	"	2	" "		2.00
" 4	" "	" 1	"	2	" "		2.25
" 4½	" "	" 1	"	2	" "		2.50
" 5⅝	" Casing,	" 1	"	2	" "		2.75
" 5⅝	" "	" 3	"	4	" "		5.50
" 6	" Pipe,	" 1	"	2	" "		2.50
" 6	" "	" 3	"	4	" "		5.75
" 8	" "	" 1	"	2	" "		4.50
" 8	" "	" 3	"	4	" "		6.50
" 10	" "	" 1	"	2	" "		5.50
" 10	" "	" 3	"	4	" "		6.75
" 12	" "	" 1	"	2	" "		6.25
" 12	" "	" 3	"	4	" "		8.75

Standard Brass Gas Fixture Fittings.



BRACKET SWING COCK.



UNIVERSAL BRACKET SWING COCK.



UNIVERSAL PENDANT COCK.



REVOLVING PENDANT COCK.

Standard Swing and Pendant Cocks.

Size	3/8x3/8	3/8x1/4	3/8x1/8	1/4x1/4	1/4x1/8	1/8x1/8
Bracket Swing Cocks, per dozen	9.10	8.45	8.15	8.15	7.80	7.80
Universal Bracket Cocks, per dozen	13.00	12.30	12.00	12.00	11.70	11.70
Universal Pendant Cocks, per dozen	10.20	9.70	9.40	9.10	8.80	8.80
Revolving Pendant Cocks, per dozen	8.50	8.10	7.80	7.50	7.10	7.10



UNIVERSAL SWING.



L PENDANT COCK.



WING JOINT.

Standard Swing Cocks and Wing Joints.

Size	3/8x3/8	3/8x1/4	3/8x1/8	1/4x1/4	1/4x1/8	1/8x1/8
Universal Swings, per dozen	9.10	8.80	8.80	8.40	8.10	7.80
L Pendant Cocks, per dozen	5.80	5.20	5.20	5.20	4.90	4.90
Wing Joints, per dozen	14.00	13.00	----	12.00	11.00	----



HOSE COCK, Female, Large Gas Way.



HOSE COCK, Male, Large Gas Way.



PILLAR COCK, Male.

Standard Hose and Pillar Cocks.

Size	1/2	3/8	1/4	1/8
Hose Cocks, Female, per dozen	5.50	4.90	4.50	4.20
Hose Cocks, Male, per dozen	5.80	5.20	4.90	4.50
Pillar Cocks, Male, per dozen	6.20	5.50	5.20	4.90



PILLAR COCK, Female.



HOSE END, Male.



HOSE END, Female.

Standard Pillar Cocks and Hose Ends.

Size	3/4	1/2	3/8	1/4	1/8
Pillar Cocks, Female, per dozen	6.50	5.20	4.50	4.20	3.90
Hose Ends, Male, per dozen	9.00	4.00	3.50	3.20	2.80
Hose Ends, Female, per dozen	6.00	3.60	3.20	2.90	2.60

Standard Brass Gas Fixture Fittings.



STIFF JOINT.



TOP OR MIDDLE SWING.



TWO-LIGHT PENDANT COCK.



STRAIGHT COCK.

Standard Stiff Joints, Swings and Cocks.

Size	1/2x1/2	1/2x3/8	1/2x1/4	1/2x1/8	3/8x3/8	3/8x1/4	3/8x1/8	1/4x1/4	1/4x1/8	1/8x1/8
Stiff Joints, per dozen	3.20	2.60	2.60	2.60	1.90	1.80	1.50	1.50	1.40	1.40
Top or Middle Swings, per dozen	10.00	10.00	10.00	----	6.20	5.50	5.20	4.90	4.50	4.20
Two-Light Pendant Cocks, per dozen	14.00	14.00	----	----	10.10	9.10	9.10	9.10	8.40	8.40
Straight Cocks, per dozen	6.20	6.20	----	----	4.90	4.50	4.50	4.50	4.20	3.90



CHANDELIER HOOK, Male.



CHANDELIER HOOK, Female.



STRAIGHT NOZZLE.



BRASS CAP.

Chandelier Hooks, Straight Nozzles and Brass Caps.

Size	1/2	3/8	1/4	1/8
Chandelier Hooks, Male, per dozen	3.00	2.60	2.60	2.60
Chandelier Hooks, Female, per dozen	3.00	2.60	2.60	2.60
Straight Nozzles, per dozen	3.00	1.90	1.60	1.00
Brass Caps, per dozen	2.60	1.90	1.90	1.90



INDEPENDENT COCK.



L BURNER COCK.



SIDE NOZZLE.

Standard Independent and L Burner Cocks and Side Nozzles.

Size	1/2x1/2	1/2x3/8	3/8x3/8	1/4x1/4	1/8x1/8
Independent Cocks, per dozen	8.00	8.00	6.50	6.00	5.50
Size	1/2x1/8	3/8x1/8		1/4x1/8	1/8x1/8
L Burner Cocks, per dozen	6.20	5.20		4.50	4.20
Side Nozzles, per dozen	----	2.30		1.60	1.00



LENGTHENING PIECE.



TWO-LIGHT PILLAR BODY.

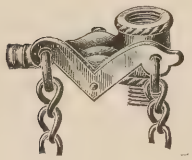


TWO-LIGHT BRACKET OR Y BODY.

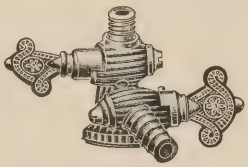
Lengthening Piece, Two-Light Pillar and Bracket Body.

Size	3/8x3/8
Lengthening Pieces, per dozen	1.90
Two-Light Pillar Bodies, per dozen	5.20
Two-Light Bracket or Y Bodies, per dozen	3.90

Miscellaneous Gas Appliances.



INDEPENDENT COCK.
Lever Key (6 ft. Chain on each Cock).



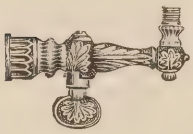
DOUBLE INDEPENDENT COCK.



INDEPENDENT COCK.
For Burner.

Independent Cocks.

Size	½ x ⅜	⅜ x ⅜	⅛ x ⅛
Independent Cocks, per dozen	16.00	14.20	----
Double Independent Cocks, per dozen	----	----	12.00
Independent Cocks for Burner, per dozen	----	6.50	----



L BURNER COCK, LONG.

L Burner Cocks, Long.

Size	¼ x 4½	⅜ x 4½
Per dozen	8.25	8.25

Gas Burners, Pillars and Tips.



ALUMINUM GAS TIP.
Gross 2.50



IRON BURNER, BAT WING.
Dozen .60
Gross 6.00



COMMON BRASS BURNER WITH WIRE SCREEN.
Dozen .50
Gross 4.50



BRAY BRASS PILLAR WITH REGULATOR.
Gross 4.50



BRAY SLIT UNION BURNER.
Gross 5.50



BRAY UNION JET BURNER.
Gross 5.50



BRASS PILLAR FOR REGULATOR.
Gross 2.00



BRASS PILLAR FOR LAVA TIPS.
Dozen .20
Gross 2.00



FISH TAIL IRON BURNER.
Gross 2.50



LAVA TIP.
Gross 2.00



TAPER SLIDE AND KEY AND PLAIN GAS KEY.

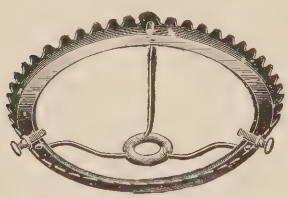
Nickel Plated, per dozen	8.00
Brass, per dozen	10.00
Plain Gas Key, per dozen	6.00



MOHAIR TUBING, PATENT ENDS.
Lengths 2, 4, 6, 8, 10, 12 Feet.
.16 per Foot.



WAX TAPERS.
Per doz. bxs., 30 Tapers in ea. 1.50
Per doz. bxs., 60 Tapers in ea. 3.00



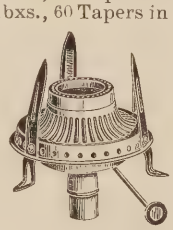
FANCY RING OR GLOBE HOLDER.

4 inch, per gross	13.00
per dozen	1.25
5 inch, per gross	15.00
per dozen	1.40



MONITOR HEATING BURNER AND STAND.

No. 1 Burner, Brass Stem, per doz.	3.00
No. 2 " Iron " " "	8.00
No. 3 " " " " "	10.00
No. 1 Stand Iron, " "	3.00
No. 2 " " " "	6.00
No. 3 " " " "	9.00



NOISELESS ARGAND BURNER
With Grecian Holder.
Per dozen 6.00, per gross 60.00



WIRE GLOBE.
7 inch diameter, per dozen.. 6.00



GOOSE NECK FOR PORTABLE STAND
With Drop Light Socket.

Goose Neck, per dozen	2.50
Socket, " "	2.00

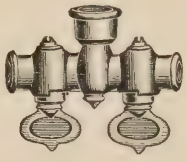


MATCHLESS SELF-LIGHTING BURNER.
Each .75

Extra Heavy Mill Fittings.



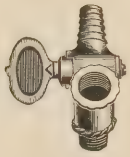
TOP OR MIDDLE SWING.



TWO-LIGHT PENDANT COCK.



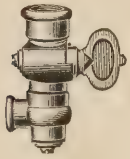
STRAIGHT COCK.



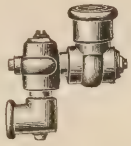
INDEPENDENT COCK.

Extra Heavy Swings and Cocks.

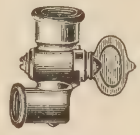
Size	1/2x1/2	1/2x3/8	1/2x1/4	3/8x3/8	3/8x1/4	3/8x1/8	1/4x1/4	1/4x1/8	1/8x1/8
Top or Middle Swings, per dozen	10.40	10.40	10.40	9.40	8.40	8.40	6.50	6.50	5.80
Two-Light Pendant Cocks, per dozen	15.60	-----	15.60	13.60	13.60	13.60	13.50	13.50	13.50
Straight Cocks, per dozen	7.80	7.50	-----	7.10	7.10	7.10	6.80	6.80	6.80
Independent Cocks, per dozen	-----	11.50	-----	9.10	3x3/8 Lever 10.50 per dozen.				



REVOLVING PENDANT COCK.



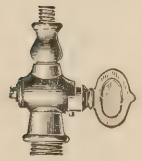
UNIVERSAL SWING.



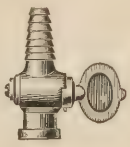
L PENDANT COCK.

Extra Heavy Pendant and Swing Cocks.

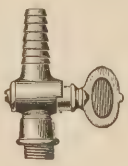
Size	3/8x3/8	3/8x1/4	3/8x1/8	1/4x1/4	1/4x1/8	1/8x1/8
Revolving Pendant Cocks, per dozen	10.40	10.40	10.40	10.40	10.40	10.40
Universal Swings, "	14.00	13.00	13.00	12.30	12.30	12.00
L Pendant Cocks, "	7.80	7.80	7.80	7.80	7.50	----



PILLAR COCK, Male.



HOSE COCK, Female.



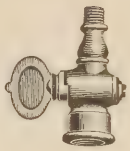
HOSE COCK, Male.



L BURNER COCK.



LEVER STREET-LAMP COCK.

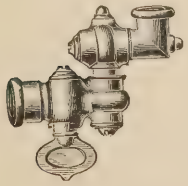


PILLAR COCK, Female.

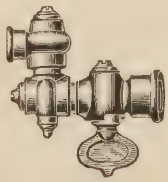
Extra Heavy Burner and Hose Cocks.

Size	1/2	3/8	1/4	1/8
Pillar Cocks, Male, per dozen	8.20	7.50	7.20	7.20
Hose Cocks, Female, per dozen	7.50	7.00	7.00	7.00
Hose Cocks, Male, "	8.60	8.00	8.00	8.00
L Burner Cocks, "	9.10	7.80	7.10	7.10

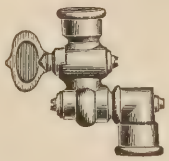
Size	1x1/8	3/4x1/8	1/2x1/8	3/8x1/8	1/4x1/8	1/8x1/8
Lever Street-Lamp Cocks, per dozen	14.80	7.80	7.10	6.50	6.10	6.10
Pillar Cocks, Female, per dozen	----	7.80	7.10	6.50	6.20	6.20



UNIVERSAL BRACKET COCK.



BRACKET SWING COCK.



UNIVERSAL PENDANT COCK.



SIDE NOZZLE.



STRAIGHT NOZZLE.

Extra Heavy Swing Cocks and Nozzles.

Size	3/8x3/8	3/8x1/4	3/8x1/8
Universal Bracket Cocks, per dozen	16.90	15.60	15.60
Bracket Swing Cocks, "	11.70	11.70	11.70
Universal Pendant Cocks, "	15.60	14.30	13.00

Size	3/8x1/8	1/4x1/8	1/8x1/8
Side Nozzles, per dozen	2.60	2.20	1.90
Straight Nozzles, per dozen	2.20	1.90	1.60

Common Staple Brackets.



No. 100.

No.		Each.
100.	6-inch	.40
101.	8-inch	.45



No. 102.

No.	Each.
102	.45



No. 103.

No.	Each.
103	.60



No. 104.

No.	Each.
104	.50



No. 105.

No.	Each.
105	.75



No. 106.

No.	Each.
106	1.00



No. 110.

No.	Each.
110	.55



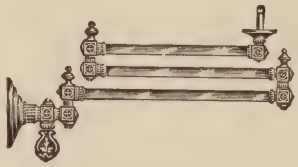
No. 111.

No.	Each.
111	.90



No. 112.

No.	Each.
112	1.25



No. 113.

No.	Each.
113	1.65



No. 109.

No.		Each.
109.	Gilt	1.00
109.	Polished	1.20



No. 125.

No.		Each.
125.	Gilt	.60
125.	Polished	.70



No. 114.

No.	Each.
114	.75



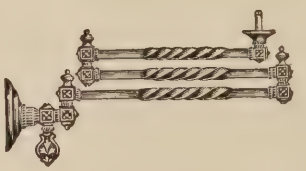
No. 115.

No.	Each.
115	1.20



No. 116.

No.	Each.
116	1.65



No. 117.

No.	Each.
117	2.10



No. 122.

No.	Each.
122	1.40



No. 121.

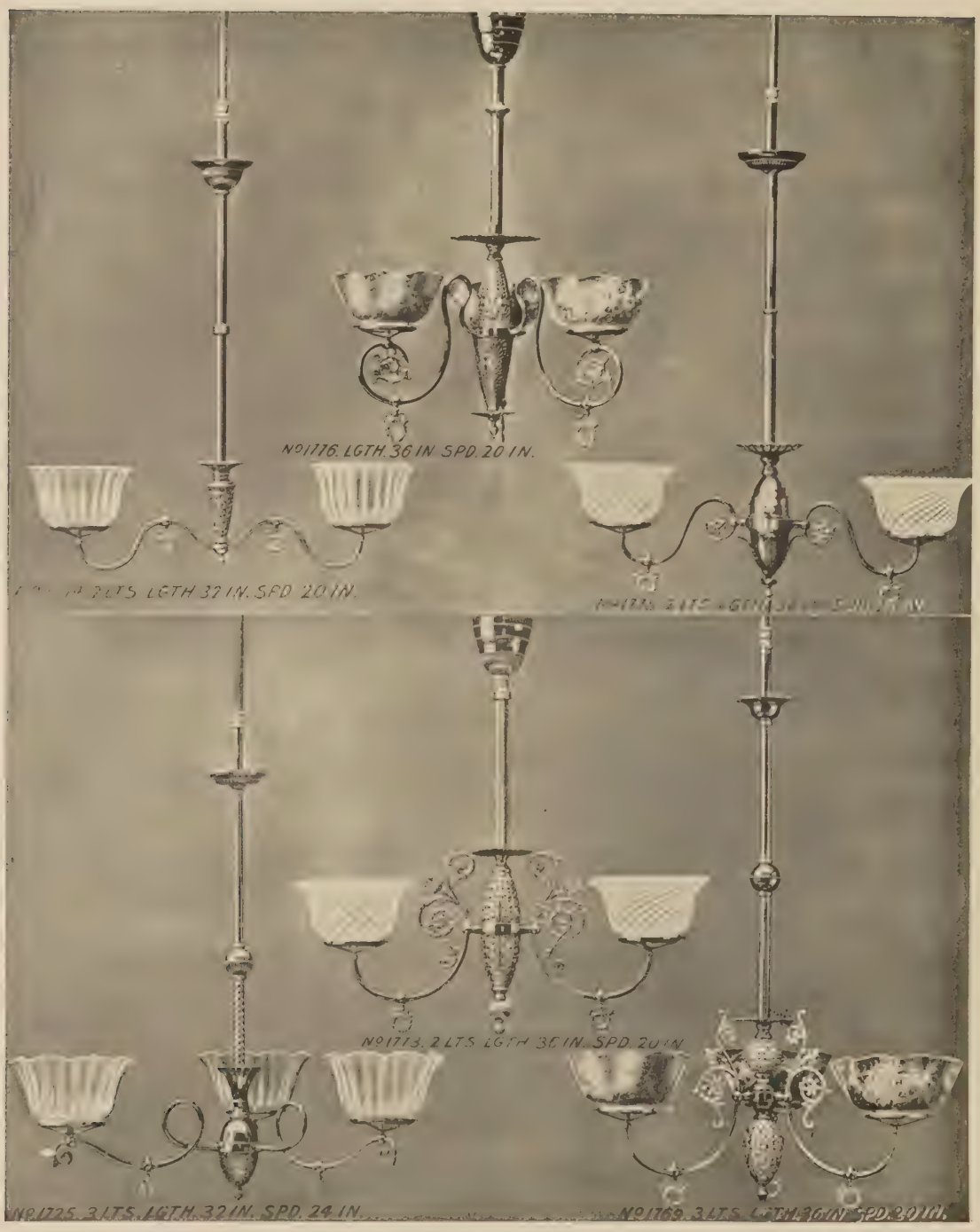
No.	Each.
121	1.00

Gas Chandeliers.



No.			Number of Lights. 2	3	4
5014.	Gas	Chandelier	4.50	5.60	6.70
10048.	"	"	5.50	7.25	9.00
5020.	"	"	6.00	7.50	9.00
5021.	"	"	8.00	10.00	12.00

Gas Chandeliers.



No.			Number of Lights. 2	3	4
1774.	Gas Chandelier		3.75	5.00	6.25
1776.	"	"	10.00	12.00	14.00
1775.	"	"	8.15	10.00	11.85
1725.	"	"	4.40	5.90	7.40
1773.	"	"	9.50	11.50	13.50
1769.	"	"	8.50	10.50	12.50

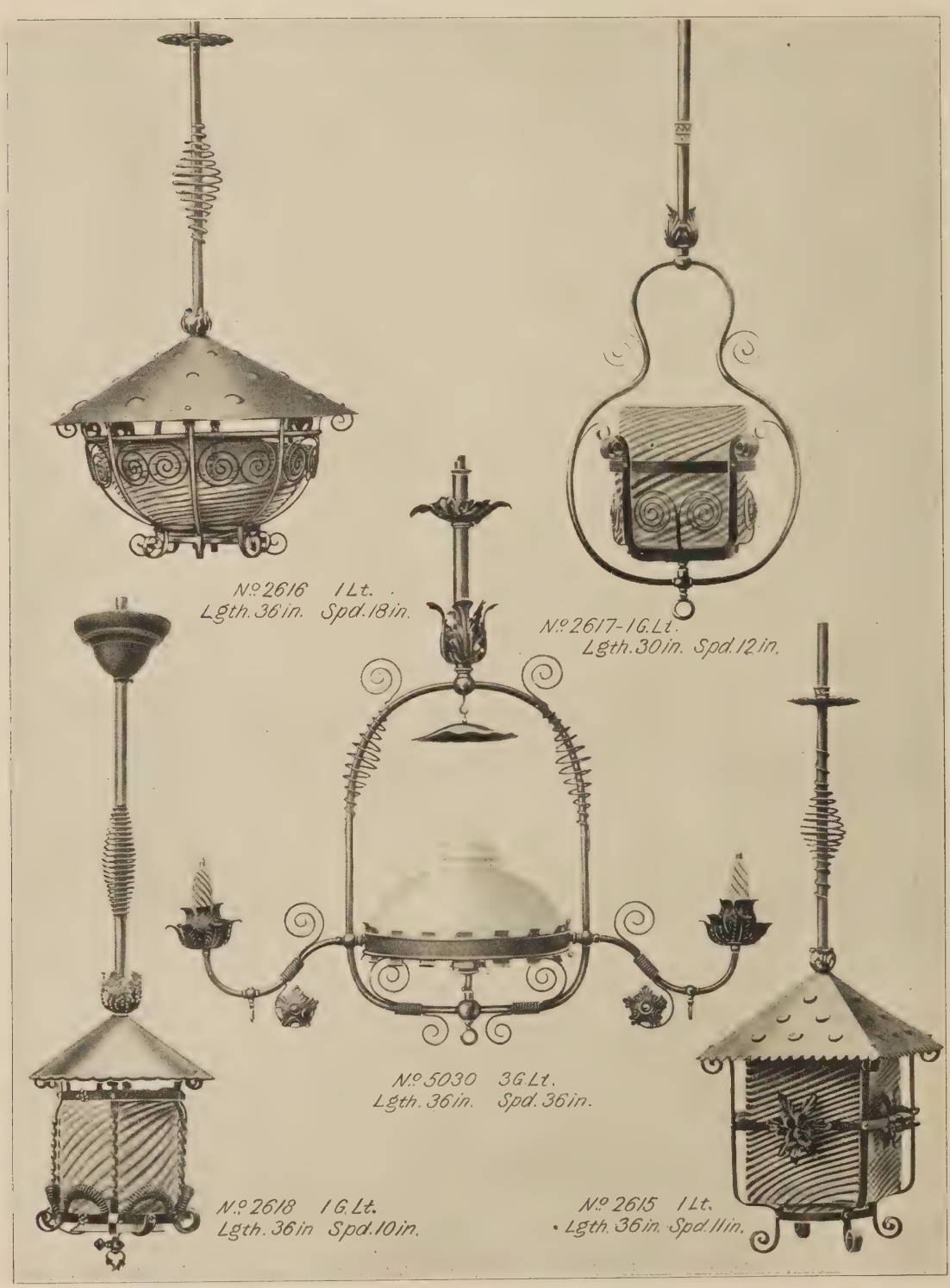
Gas Chandeliers.





No.		Number of Lights. 2	3	4
5001.	Gas Chandeliers	3.50	4.75	6.00
5017.	" "	3.90	5.00	6.10
5016.	" "	4.50	5.75	7.00
5007.	" "	6.10	7.75	9.40
5008.	" "	6.00	6.65	9.30
5013.	" "	4.50	6.15	7.80

Iron Lanterns and Dining Room Fixtures.



No. 2616. Iron Lantern, complete, each.... 9.00
" 2618. " " " " .. 9.00
No. 2617. Iron Lantern, complete, each.... 10.00
" 2615. " " " " 11.00

No. 5030. Iron Dining Room Fixture, 3 Lt., 17.00; 4 Lt., 21.00; 5 Lt., 25.00
No glass or Argand burners included.

Gas Portables.



No. 766. Gas Portable.. 1.87 No. 769. Gas Portable.. 4.50 No. 765. Gas Portable.. 3.15
No. 768. Gas Portable.. 1.60 No. 767. Gas Portable.. 2.20

NOTE.—The above Prices are for Stands only.

Gas Chandeliers.



For List Prices, see Page 92.

Gas Chandeliers.



1688
LENGTH 34 IN.
SPREAD 20 IN.



1697
LENGTH 34 IN.
SPREAD 20 IN.



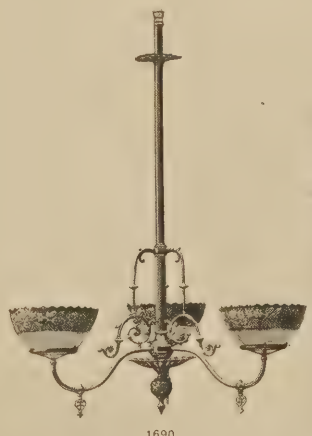
1674
LENGTH 34 IN. SPREAD 28 IN.



1693
LENGTH 30 IN. SPREAD 18 IN.



1672
LENGTH 32 IN. SPREAD 22 IN.



1690
LENGTH 36 IN. SPREAD 22 IN.



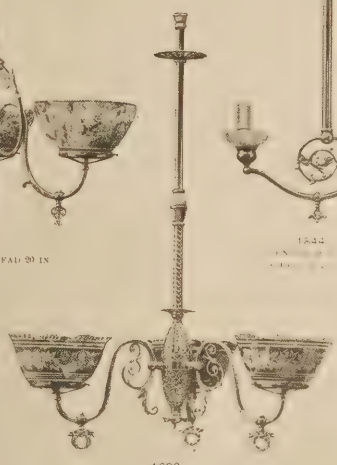
1714
LENGTH 31 IN. SPREAD 20 IN.



1644



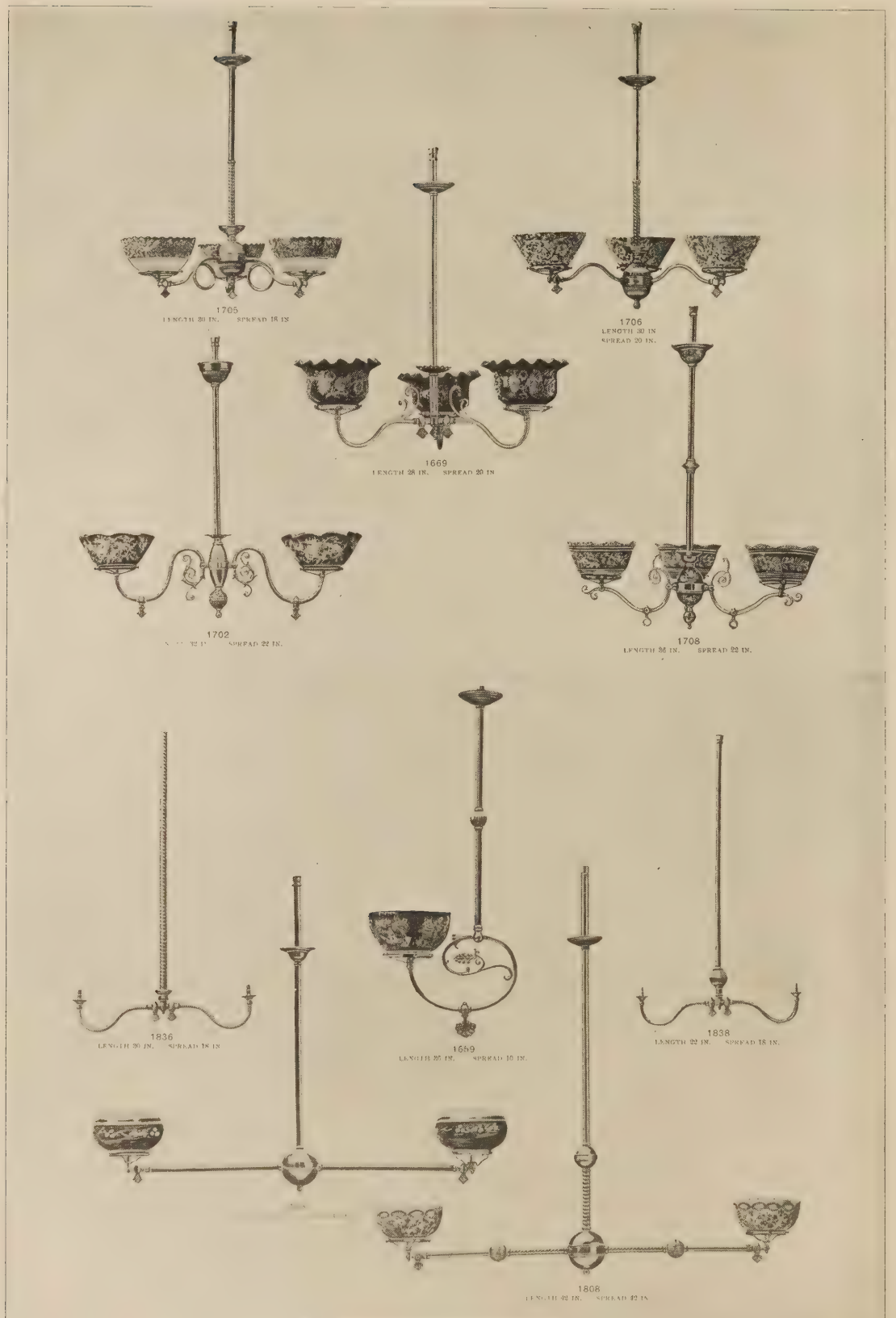
1663
LENGTH 36 IN. SPREAD 13 IN.



1689
LENGTH 34 IN. SPREAD 20 IN.

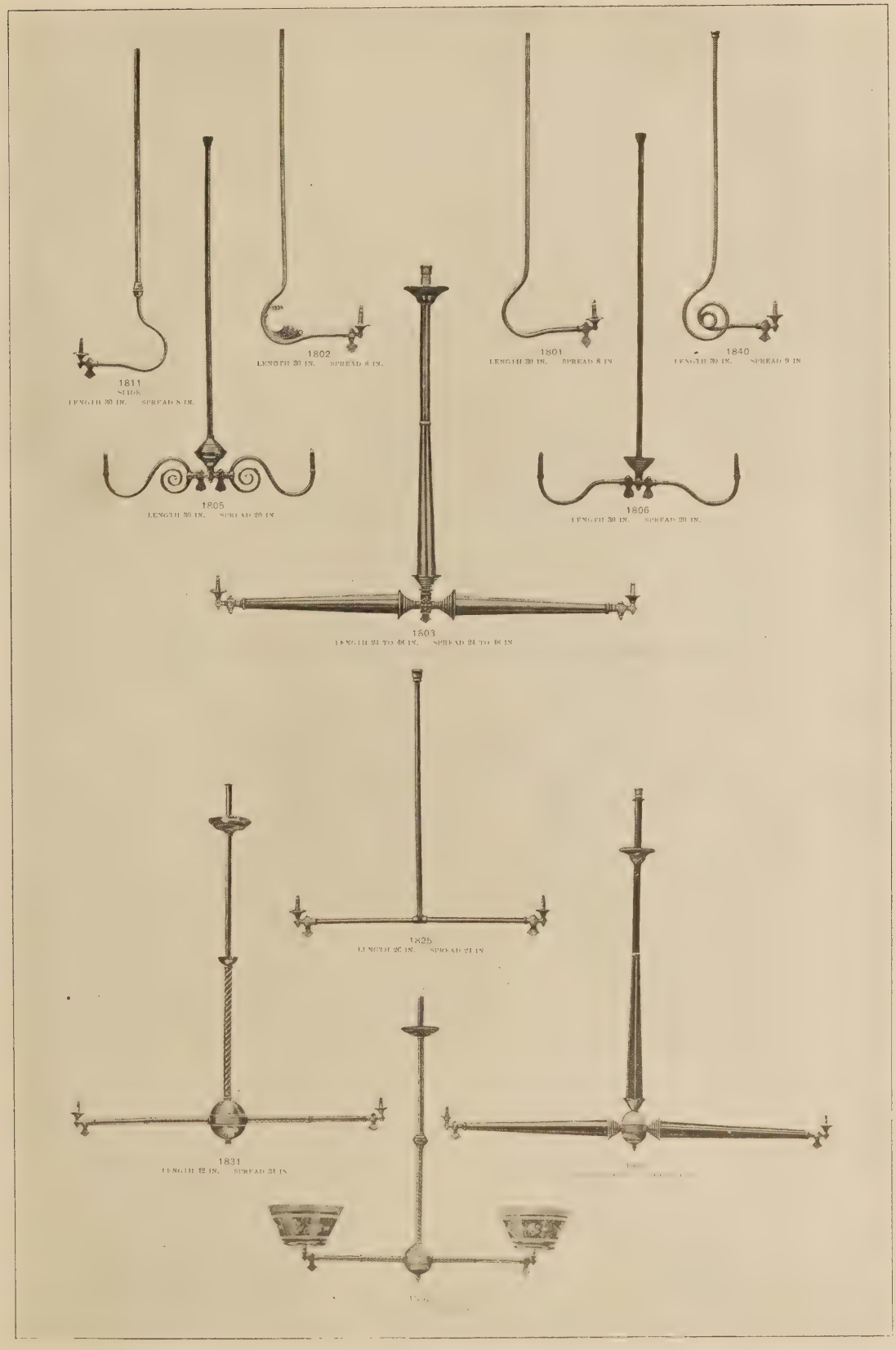
For List Prices, see Page 92.

Gas Chandeliers.



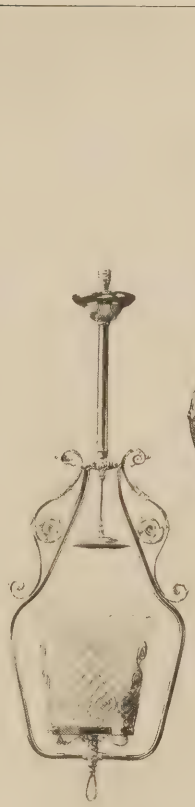
For List Prices, see Page 92.

Gas Chandeliers.



For List Prices, see Page 92.

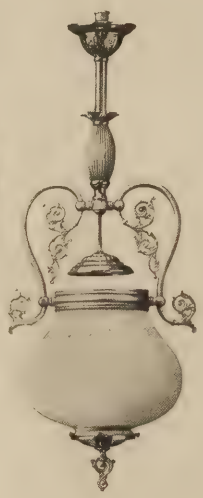
Gas Chandeliers and Lanterns.



2602
LENGTH 24 IN. SPREAD 12 IN.



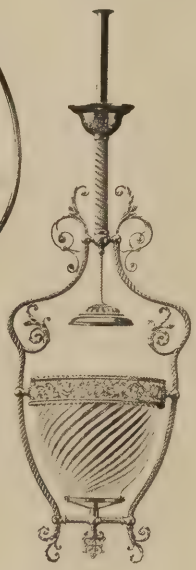
2600
LENGTH 36 IN.
SPREAD 12 IN.



2601
LENGTH 32 IN. SPREAD 13 IN.



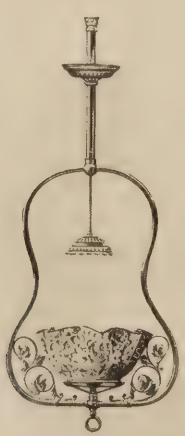
586
LENGTH 32 IN.
SPREAD 12 IN.



559
LENGTH 36 IN. SPREAD 12 IN.



2120
HEIGHT 21 IN. SPREAD 5" IN.



587
LENGTH 12 IN.

1761
LENGTH 42 IN. SPREAD 21 IN.

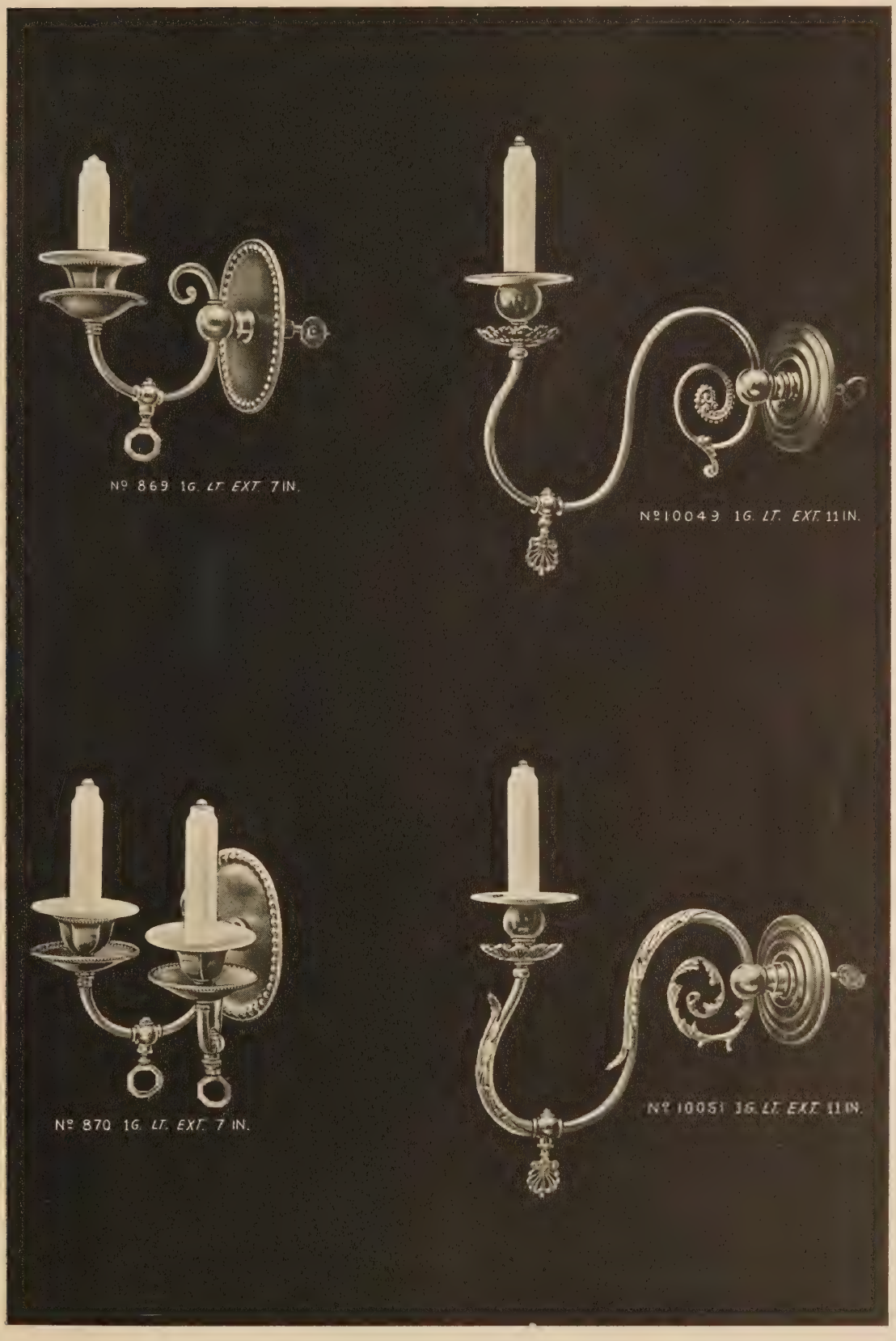
2605
LENGTH 30 IN. SPREAD 13 IN.



2119

For List Prices, see Page 92.

Fancy Gas Brackets.



For List Prices, see Page 92.

Gas Chandeliers, Lanterns and Brackets.

List Prices applying to illustrations shown on pages 86 to 91.

PAGE 86.

No. 1673.	2 Light Chandelier	5.00	1.50 for each additional arm.
No. 1692.	2 " "	5.00	1.50 " " "
No. 1699.	2 " "	5.50	1.50 " " "
No. 1662.	1 " "	3.50	Made in 1 Light only.
No. 1698.	2 " "	4.50	1.00 for each additional arm.
No. 1664.	2 " "	4.50	1.00 " " "
No. 1684.	2 " "	15.00	5.00 " " "
No. 1671.	2 " "	6.00	2.00 " " "
No. 1712.	4 " "	17.00	4.50 " " "
No. 1661.	2 " "	16.00	5.00 " " "

PAGE 87.

No. 1688.	2 Light Chandelier	9.00	2.00 for each additional arm.
No. 1697.	2 " "	10.00	2.00 " " "
No. 1674.	2 " "	5.50	1.50 " " "
No. 1693.	2 " "	2.80	.80 " " "
No. 1672.	2 " "	5.00	1.50 " " "
No. 1690.	2 " "	7.00	2.50 " " "
No. 1714.	2 " "	11.00	3.00 " " "
No. 1844.	1 " "	3.00	Made in 1 Light only.
No. 1663.	2 " "	6.00	" 2 " "
No. 1689.	2 " "	7.00	2.00 for each additional arm.

PAGE 88.

No. 1705.	2 Light Chandelier	3.50	1.00 for each additional arm.
No. 1706.	2 " "	3.20	.80 " " "
No. 1669.	2 " "	3.50	1.50 " " "
No. 1702.	2 " "	5.50	1.50 " " "
No. 1708.	2 " "	5.60	2.00 " " "
No. 1836.	2 " Pendant Polished Brass	2.20	
No. 1659.	1 " " " "	3.50	
No. 1838.	2 " " " "	2.50	
No. 1830.	2 " " " "	4.00	1.00 " " "
No. 1808.	2 " " " "	6.00	1.50 " " "

PAGE 89.

No. 1811.	1 Light Pendant, slide dipped	2.50	
No. 1802.	1 " " polished brass	1.40	
No. 1801.	1 " " iron bronze, per dozen	8.00	
No. 1801.	1 " " polished brass, per dozen	10.00	
No. 1840.	1 " " " " each	1.50	
No. 1805.	2 " " " " "	3.00	
No. 1806.	2 " " " " " "	2.20	
No. 1803.	2 " " bronze, 24 inch	2.00	For each additional 6 inch drop on spread to 48 inch, add 20c.
No. 1803.	2 " " " 30 "	2.20	
No. 1803.	2 " " " 36 "	2.40	
No. 1825.	2 " " iron bronze	1.80	
No. 1831.	2 " " polished brass	4.50	1.30 for each additional arm.
No. 1837.	2 " " bronze, 24 inch	2.50	Add 20c. for each additional size.
No. 1837.	2 " " " 30 "	2.70	
No. 1837.	2 " " " 36 "	2.90	
No. 1507.	2 " " polished brass	3.00	

PAGE 90.

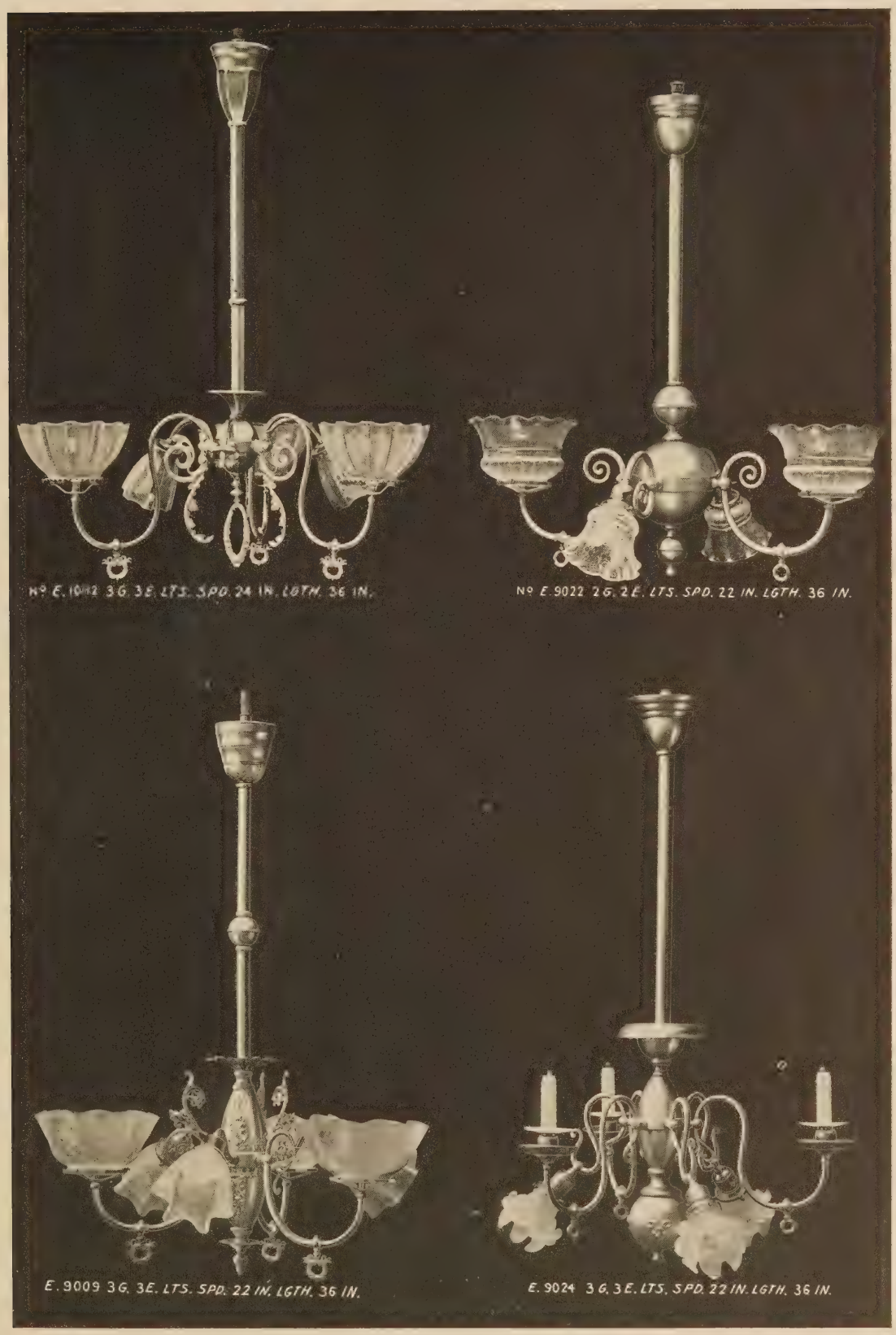
No. 2600.	1 Light Lantern, complete	14.00	
No. 586.	1 " " "	6.00	
No. 2602.	1 " " "	9.50	
No. 2601.	1 " " "	12.00	
No. 559.	1 " " "	12.00	
No. 587.	1 " " no glass	3.00	Complete, 3.50
No. 2605.	1 " " "	2.50	" 3.00
No. 2120.	1 " Standard, polished brass	8.00	
No. 1761.	2 " Chandelier	12.00	2.00 for each additional arm.
No. 2119.	1 " Standard	5.50	

PAGE 91.

No. 869.	Fancy Brackets, 1 Light	2.75	
No. 10049.	" " 1 "	2.50	
No. 870.	" " 2 "	5.00	
No. 10051.	" " 1 "	3.50	

PLEASE NOTE.—The above prices include no Globes or Glassware except where so quoted.

Combination Gas and Electric Chandeliers.



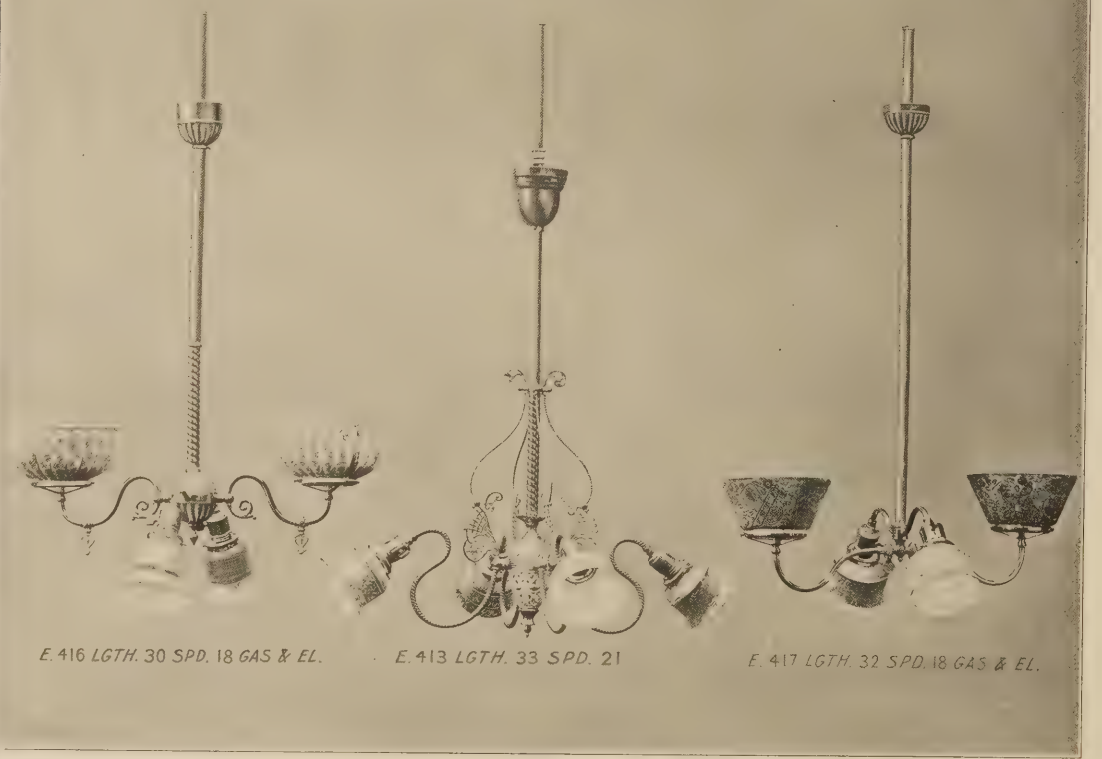
For List Prices, see Page 99.

Combination Gas and Electric Chandeliers.



No E. 480 2 G. 2 E. LTS. LGTH. 36 IN. SPD. 18 IN.

No E. 483. 2 G. 2 E. LTS. LGTH. 34 IN. SPD. 20 IN.



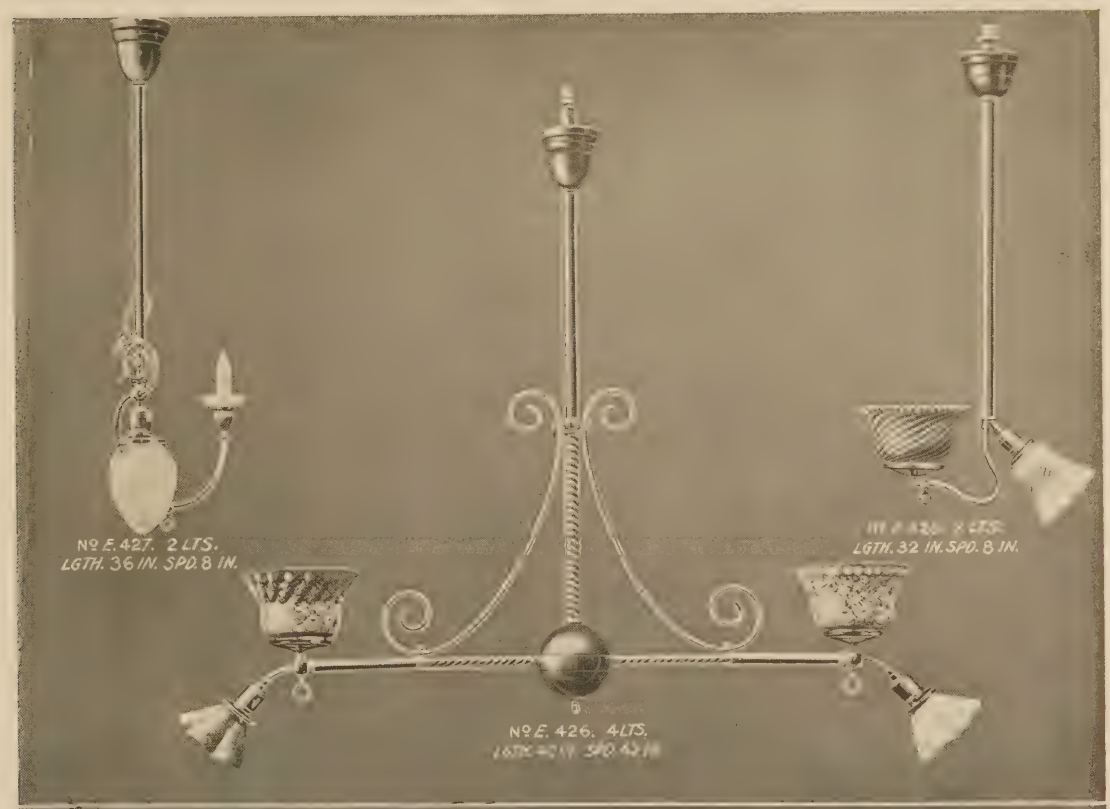
E. 416 LGTH. 30 SPD. 18 GAS & EL.

E. 413 LGTH. 33 SPD. 21

E. 417 LGTH. 32 SPD. 18 GAS & EL.

For List Prices, see Page 99.

Combination Gas and Electric Chandeliers.





For List Prices, see Page 99.

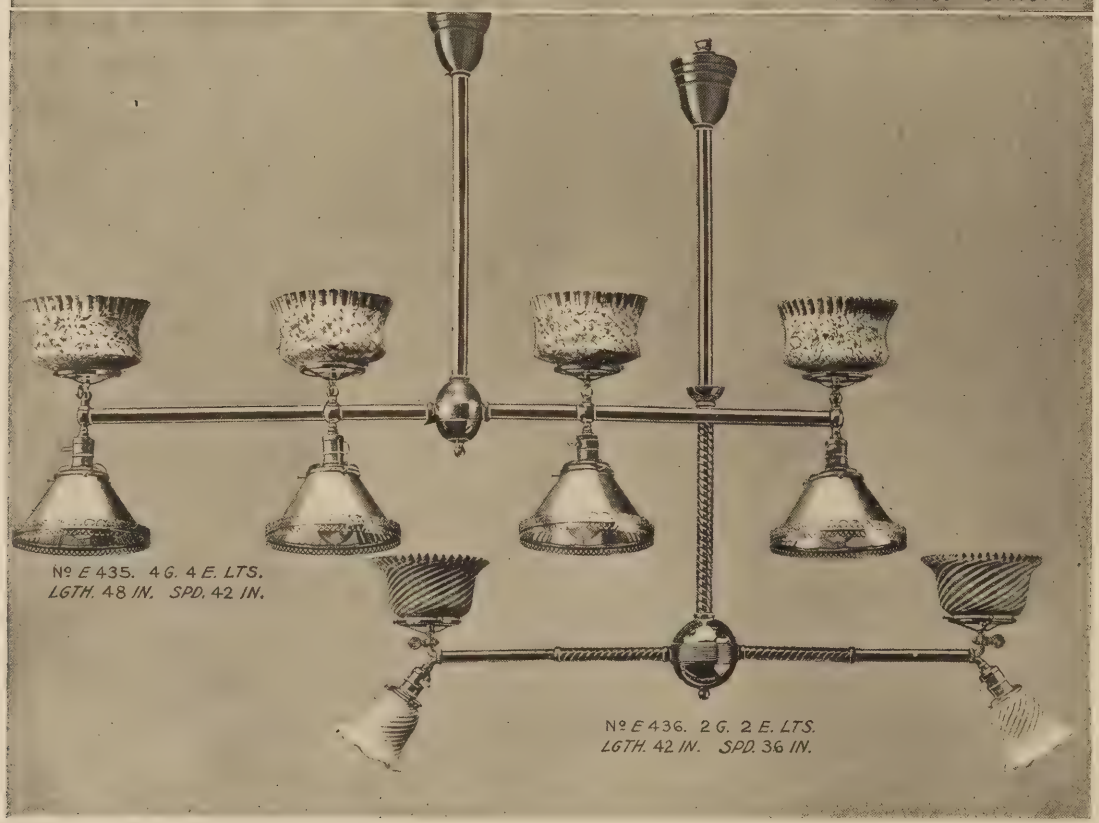
Combination Gas and Electric Chandeliers.



E. 602 LGTH. 30 IN. SPD. 9 IN.

E. 603 LGTH. 28 IN. SPD. 9 IN.

E. 604 LGTH. 30 IN. SPD. 9 IN.

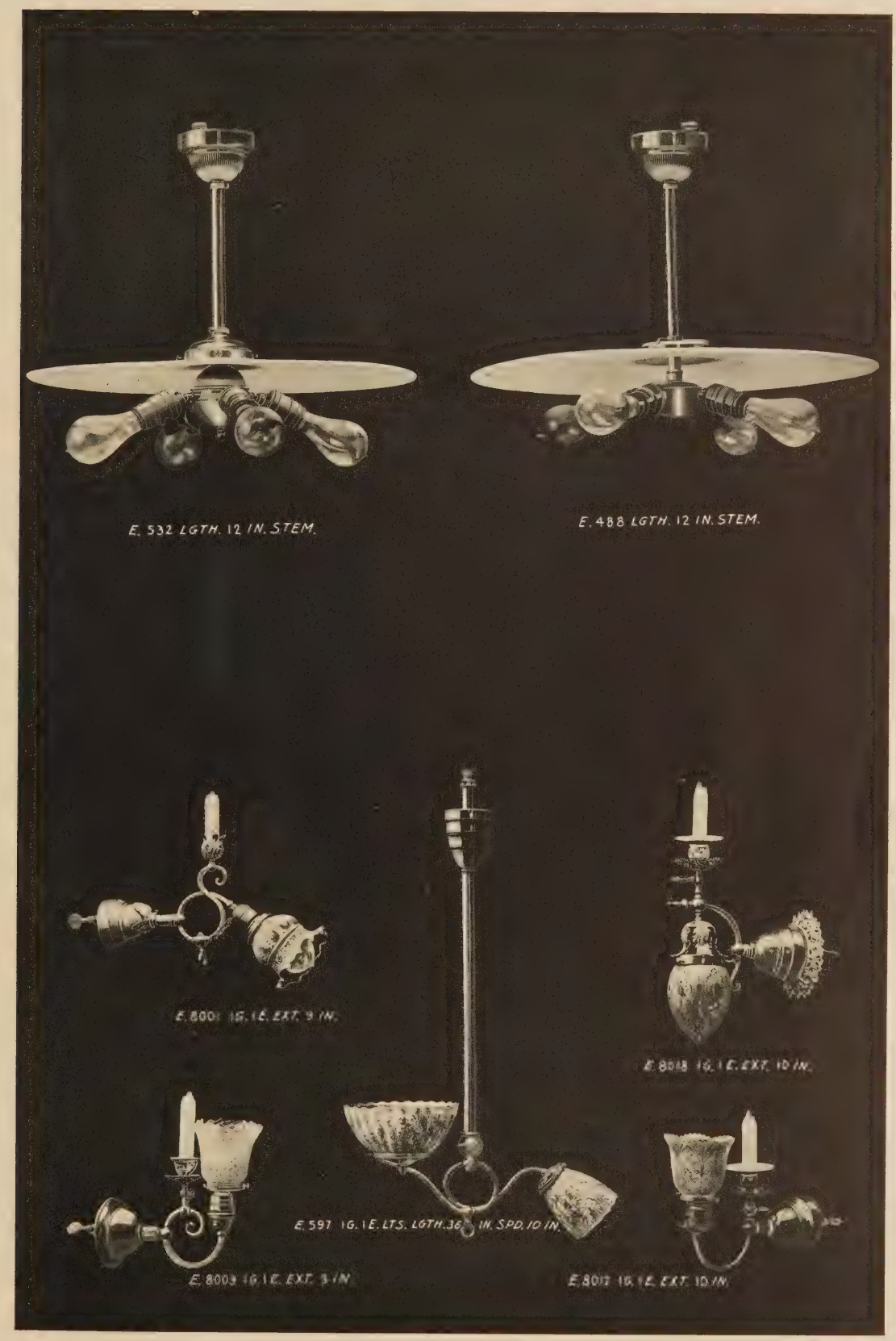


Nº E 435. 4 G. 4 E. LTS.
LGTH. 48 IN. SPD. 42 IN.

Nº E 436. 2 G. 2 E. LTS.
LGTH. 42 IN. SPD. 36 IN.

For List Prices, see Page 99.

Electric Clusters, Combination Brackets, Etc.



For List Prices, see Page 99.

Electric Portables.



No. E 2503 ..... 4.38
No. E 2500 ..... 3.75

E 2504 ..... 3.75
E 2501 ..... 5.00

E 2505 ..... 1.50
E 2502 ..... 4.45

Combination Gas and Electric Chandeliers, Lanterns and Brackets.

List Prices applying to illustrations shown on pages 93 to 97.

PAGE 93.

No.	No. Lights—2 Gas, 2 Electric.	3 Gas, 3 Electric.	4 Gas, 4 Electric.
E 10112	13.00	16.00	19.00
E 9022	10.00	13.00	16.00
E 9009	8.50	10.50	12.50
E 9024	10.00	13.00	16.00

PAGE 94.

No.	No. Lights—2 Gas, 2 Electric.	3 Gas, 3 Electric.	4 Gas, 4 Electric.
E 480	3.75	4.75	5.75
E 483	6.70	8.50	10.30
E 416	7.25	----	----
E 417	4.50	----	----
E 413. Electric only	2 Lights, 9.00	3 Lights, 11.75	4 Lights, 14.50

PAGE 95.

No.	No. Lights—1 Gas, 1 Electric.	2 Gas, 1 Electric.	2 Gas, 2 Electric.
E 427	5.50	----	----
E 428	2.25	----	----
E 426	----	----	10.00
E 494	8.25	----	----
E 499	----	13.75	----
E 505	----	12.00	----

PAGE 96.

No.	No. Lights—1 Gas, 1 Electric.	2 Gas, 2 Electric.	4 Gas, 4 Electric.
E 602	7.75	----	----
E 603	6.00	----	----
E 604	7.50	----	----
E 435	----	----	11.00
E 436	----	6.50	----

PAGE 97.

Prices for E 532 include separable ball cluster, holder for 3¼ inch shade, canopy, crowfoot and polished brass stem, ready to attach, sockets and shade, and are for stem up to 12 inches in length. Each fixture is also furnished with a brass nipple to take the place of the ornament so that another light may be added to the bottom.

E 532—No. Lights	2	3	4	5	6	7	8	9	10	11	12	14	16
Each	2.50	2.60	2.80	3.10	3.25	3.60	3.80	4.10	4.50	4.90	5.25	6.10	7.90
E 488—With Glass	3.95	4.05	4.25	4.55	4.70	----	----	----	----	----	----	----	----
E 488—Without Glass	2.50	2.60	2.80	3.10	3.25	----	----	----	----	----	----	----	----

No.	No. Lights—1 Gas, 1 Electric.
E 8001	3.25
E 8018	8.00
E 8009	3.70
E 597	3.00
E 8012	1.85

In ordering please note instructions on following page.

Combination Gas and Electric Chandeliers, Lanterns and Brackets.

The following instructions should be carefully observed in ordering fixtures shown on preceding pages.

Prices of fixtures do not include wiring, insulating joints, sockets or electric holders, or glassware, except where especially mentioned, and are for lengths as named. Extra lengthening will be charged for at prices contained in list below.

In ordering, state whether fixtures are to be wired and insulated, or require sockets and holders, and should they be ordered in colors other than those mentioned, the sockets and holders should be colored to match, and will be charged at the usual advance.

Prices are understood to be for polished brass, old brass, rich gilt or jet black, but we have facilities for supplying any finish desired at a reasonable extra charge, as shown in list below.

Spreads of fixtures are measured to end of nozzle only, and not to the end of lamps.

Special designs furnished for electric, gas and combination fixtures when desired.

Extra Lengthening.

Fixtures made to the desired length at the following advance per foot:

	Per foot, not wired.	Per foot, wired.
3/8 inch tubing	.25	.35
1/2 " "	.28	.38
5/8 & 3/4 inch, casing including iron pipe	.35	.45
7/8 & 1 " " " " "	.45	.55
1 1/8 & 1 1/2 inch " " " "	.60	.70

Special Finishes.

The following advance will be made for the different finishes:

Silver on fixtures	20 per cent.	On extensions	30 per cent.
Ormolu on "	20 " "	" "	25 " "
Copper " "	10 " "	" "	15 " "
Steel or Oxidized Iron on fixtures	10 " "	" "	15 " "
Nickel Plated on fixtures	15 " "	" "	20 " "
Ormolu, real gold "	40 " " (and over)	" "	45 " "
Mat. Gilt on brass "	15 " "		

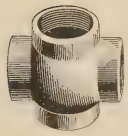
Malleable Railing Fittings.


ELBOW.


ELBOW, SIDE OUTLET.


TEE.

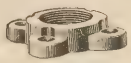

TEE, SIDE OUTLET.


CROSS.


CROSS, SIDE OUTLET.


ACORN ORNAMENT.


BUSHING.


FLOOR FLANGE A.


FLOOR FLANGE B.

In ordering these Railing Fittings be careful to state whether right hand or left hand threads are wanted. Where Fittings are required having right and left hand outlets, please fully describe which are wanted right hand and which left hand. A careful observance of the above will save much trouble and secure the accurate filling of your orders.

Malleable Railing Fittings.

Pipe, Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Elbow	.15	.18	.20	.35	.45	.72	1.00	1.50
" Side Outlet	.20	.23	.25	.40	.50	.80	1.15	1.70
Tee	.20	.23	.25	.40	.50	.75	1.20	1.90
" Side Outlet	.30	.33	.35	.45	.55	.90	1.40	2.15
Cross	.30	.33	.35	.45	.58	1.00	1.50	2.25
" Side Outlet	.35	.38	.40	.50	.65	1.35	1.75	2.60
Floor Flange A	.14	.15	.15	.20	.28	.30	.50	.75
" " B	.15	.18	.22	.35	.36	.55	.80	....
Acorn Ornament	.16	.18	.20	.25	.35	.90	1.00	1.50
Bushings reduced one and two sizes	....	.06	.07	.10	.12	.18	.28	.40

List of Reducing Sizes of Railing Fittings.

Elbows.

1 x 1/2
1 x 3/4
1 1/4 x 3/4
1 1/4 x 1
1 1/2 x 1
1 1/2 x 1 1/4
2 x 1 1/4
2 x 1 1/2
---
2 1/2 x 2
---
3 x 2 1/2
---
3 x 2

Elbows, Side Outlet.

1 x 1/2 x 1/2
1 x 3/4 x 3/4
1 1/4 x 3/4 x 3/4
1 1/4 x 1 x 1
1 1/2 x 1 x 1
1 1/2 x 1 1/4 x 1 1/4
2 x 1 1/4 x 1 1/4
2 x 1 1/2 x 1 1/2
---
2 1/2 x 2
---
3 x 2
---
3 x 2 1/2

Tees.

1/2 x 1/2 x 1
3/4 x 3/4 x 1
3/4 x 3/4 x 1 1/4
1 x 1 x 1 1/4
1 x 1 x 1 1/2
1 1/4 x 1 1/4 x 3/4
1 1/4 x 1 1/4 x 1
1 1/4 x 1 1/4 x 1 1/2
1 1/4 x 1 1/4 x 2
1 1/2 x 1 1/2 x 1
1 1/2 x 1 1/2 x 1 1/4
1 1/2 x 1 1/2 x 2
2 x 2 x 1 1/4
2 x 2 x 1 1/2
2 1/2 x 2
3 x 2 1/2
3 x 2

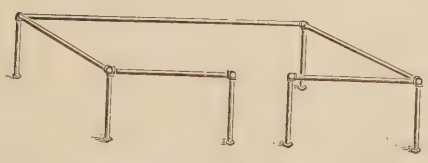
Tees, Side Outlet.

1 x 1 x 1/2 x 1/2
1 x 1 x 3/4 x 3/4
1 1/4 x 1 1/4 x 3/4 x 3/4
1 1/4 x 1 1/4 x 1 x 1
1 1/2 x 1 1/2 x 1 x 1
1 1/2 x 1 1/2 x 1 1/4 x 1 1/4
2 x 2 x 1 1/4 x 1 1/4
2 x 2 x 1 1/2 x 1 1/2
---
2 1/2 x 2 1/2 x 2 x 2
3 x 3 x 2 1/2 x 2 1/2
3 x 3 x 2 x 2

Crosses.

1 x 1 x 1/2 x 1/2
1 x 1 x 3/4 x 3/4
1 1/4 x 1 1/4 x 3/4 x 3/4
1 1/4 x 1 1/4 x 1 x 1
1 1/2 x 1 1/2 x 1 x 1
1 1/2 x 1 1/2 x 1 1/4 x 1 1/4
2 x 2 x 1 1/4 x 1 1/4
2 x 2 x 1 1/2 x 1 1/2
---
2 1/2 x 2 1/2 x 2 x 2
3 x 3 x 2 1/2 x 2 1/2
3 x 3 x 2 x 2

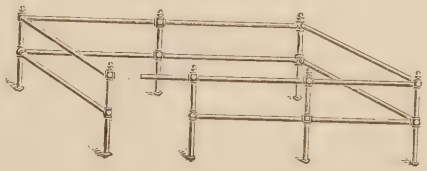
List on Reducing Sizes same as straight sizes. Advance discount, 15%.



As the Fittings do not need to be steam or water tight, a sufficiently clean thread to screw up well and make a good job can be made by running a left hand tap into any outlet tapped right hand.

PLEASE READ THIS NOTICE WITH CARE.

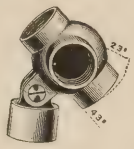
To construct a Railing two pipes high the upper outlet of all Fittings used in lower pipes should be tapped with left hand thread, but when orders are sent us without specifying how outlets are to be tapped all fittings will invariably be furnished right hand.



Malleable Railing Fittings and Fixtures.



RAIL TEE.

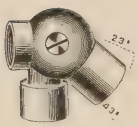


RAIL TEE, SIDE OUTLET.

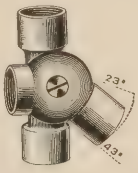


LANDING ELBOW.

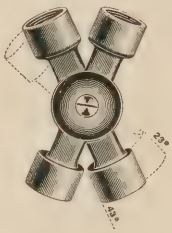
Size	½	¾	1	1¼	1½	2
Rail Tee, Plain	.40	.45	.65	1.00	1.15	1.45
" " Galvanized	.80	.90	1.30	2.00	2.30	2.90
" " Side Outlet, Plain	.45	.50	.70	1.05	1.20	1.50
" " " Galvanized	.90	1.00	1.40	2.10	2.40	3.00
Landing Elbow, Plain	.40	.45	.65	1.00	1.15	1.45
" " Galvanized	.80	.90	1.30	2.00	2.30	2.90



LANDING TEE.

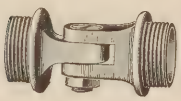


LANDING CROSS.



RAIL CROSS.

Size	½	¾	1	1¼	1½	2
Landing Tee, Plain	.40	.60	.75	1.10	1.50	2.15
" " Galvanized	.80	1.20	1.50	2.20	3.00	4.30
" Cross, Plain	.50	.70	.90	1.20	1.60	2.40
" " Galvanized	1.00	1.40	1.80	2.40	3.20	4.80
Rail Cross, Plain	.40	.65	.80	1.20	1.35	2.20
" " Galvanized	.80	1.30	1.60	2.40	2.70	4.40



PIPE GATE HINGE.



PIPE GATE LATCH.
Right and Left Hand.



FOOT RAIL PLUG.

Size	½	¾	1	1¼	1½	2
Gate Hinge, Plain	.35	.40	.45	.55	.80	1.00
" " Galvanized	.70	.80	.90	1.10	1.60	2.00
" Latch, Plain	.25	.30	.35	.40	.45	.50
" " Galvanized	.50	.60	.70	.80	.90	1.00
Rail Plug, Plain	.15	.15	.20	.25	.30	.40
" " Galvanized	.30	.30	.40	.50	.60	.80



DOUBLE FOOT RAIL BRACKET.



SINGLE FOOT RAIL BRACKET.

Size	½	¾	1	1¼	1½	2
Double Bracket, Plain	.40	.50	.70	.80	1.00	1.25
" " Galvanized	.80	1.00	1.40	1.60	2.00	2.50
Single " Plain	.40	.40	.50	.60	.90	1.15
" " Galvanized	.80	.80	1.00	1.20	1.80	2.30

Special Angle Railing Fittings.

Malleable Iron and Brass.

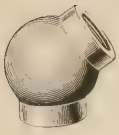


Fig. 58.



Fig. 59.

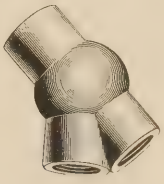


Fig. 60.

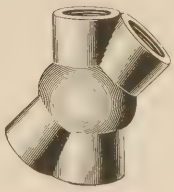


Fig. 61.

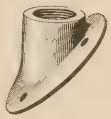


Fig. 62.

45° Malleable Iron Railing Fittings.

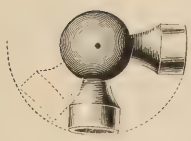
Size	1	1¼	1½	2	2½	3
No. 58 Elbow	.40	.70	.90	1.44	2.00	3.00
" 58½ " Side Outlet, not illustrated	.50	.80	1.00	1.60	2.30	3.40
" 59 "	.40	.70	.90	1.44	2.00	3.00
" 59½ " Side Outlet, not illustrated	.50	.80	1.00	1.60	2.30	3.40
" 60 Tee	.50	.80	1.00	1.60	2.40	3.80
" 60½ " Side Outlet, not illustrated	.70	.90	1.10	1.80	2.80	4.30
" 61 Cross	.70	.90	1.16	2.00	3.00	4.50
" 61½ " Side Outlet, not illustrated	.80	1.00	1.30	2.70	3.50	5.20
" 62 Floor Flange	.30	.40	.56	.60	1.00	1.50

NOTE.—Angle Railing Fittings, differing from above, at special prices.

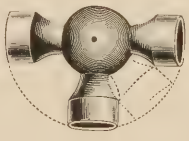
45° Angle Brass Railing Fittings—Finished.

Size	1	1¼	1½	2	2½	3
No. 800 Elbow	1.60	2.40	3.20	5.00	8.00	14.00
" 800½ " Side Outlet	2.20	3.40	4.00	6.00	12.00	17.00
" 801 "	1.60	2.40	3.20	5.00	8.00	14.00
" 801½ " Side Outlet	2.20	3.40	4.00	6.00	12.00	17.00
" 802 Tee	2.20	3.40	4.00	6.00	12.00	17.00
" 803 " Side Outlet	3.00	4.00	4.80	7.00	14.00	20.00
" 804 Cross	3.00	4.00	4.80	7.00	14.00	20.00
" 805 " Side Outlet	3.40	4.50	6.00	8.00	16.00	23.00
" 806 Floor Flange	1.10	1.50	2.00	2.60	4.00	6.00

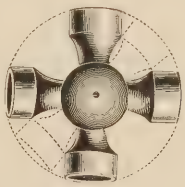
NOTE.—Angle Railing Fittings, differing from above, at special prices.



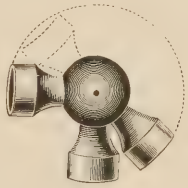
97—A.



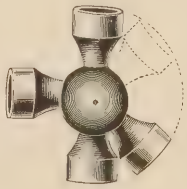
97—B.



97—C.



97—D.



97—E.

Adjustable Railing Fittings—Iron.

Size	1	1¼	1½	2
No. 97—A	1.10	1.25	1.70	2 25
" 97—B	1.30	1.50	2.00	2.50
" 97—C	1.50	1.75	2.35	2.75
" 97—D	1.30	1.60	2.15	2.50
" 97—E	1.50	1.85	2.50	2.75

Adjustable Railing Fittings—Polished Brass.

Size	1	1¼	1½	2
No. 97—A	2.75	3.15	4.25	5.65
" 97—B	3.25	3.75	5.00	6.25
" 97—C	3.75	4.40	5.95	6.90
" 97—D	3.25	4.00	5.40	6.25
" 97—E	3.75	4.65	6.25	6.90

With the use of the Adjustable Railing Fitting above illustrated almost any angle may be obtained in railings for stairs or other places requiring a deviation from horizontal or perpendicular lines which would otherwise require special patterns to attain the same results.

Polished Brass Railing Fittings.


ELBOW.

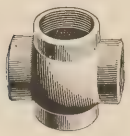

S. O. ELBOW.


45° ELBOW.

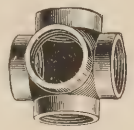

TEE.

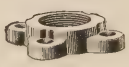

S. O. TEE.


45° TEE.


CROSS.


45° CROSS.


S. O. CROSS.


FLOOR FLANGE, PLAIN.


ACORN ORNAMENT.

Polished Brass Railing Fittings—Straight Sizes.

Sizes	½	¾	1	1¼	1½	2
Elbow	.40	.60	.80	1.20	1.60	2.20
Elbow, Side Outlet	.75	1.00	1.45	1.65	2.05	2.90
Elbow, 45°	----	----	1.50	1.70	2.15	3.00
Tee	.60	.85	1.10	1.70	2.00	2.75
Tee, Side Outlet	1.05	1.25	1.50	2.00	2.30	3.25
Tee, 45°	----	----	1.55	2.05	2.40	3.35
Cross	1.05	1.25	1.50	2.00	2.40	3.25
Cross, 45°	----	----	1.60	2.20	2.60	3.40
Cross, Side Outlet	1.20	1.45	1.70	2.12	2.60	3.50
Acorn Ornament to drive into pipe—has no thread	----	----	.80	.90	1.20	2.50
Floor Flange, plain	.26	.35	.40	.70	.95	1.30
Acorn Ornament, Threaded—male	.40	.65	.80	.90	1.20	2.50

Polished Brass Railing Fittings—Reducing Sizes.

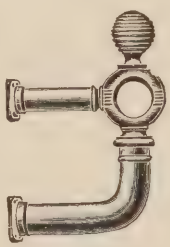
Sizes	1 x ¾	1¼ x 1	1½ x 1	2 x 1¼
Elbow, Reducing	1.00	1.50	2.00	2.75
Elbow, Side Outlet, Reducing	1.80	2.06	2.55	3.62
Tee, Reduced on Run	1.37	2.12	2.50	3.45
Tee, Reduced at Side	1.37	2.12	2.50	3.45
Side Outlet Tee, Reduced at 3 Outlets	1.87	2.50	2.87	4.05
Side Outlet Tee, Reduced at 2 Outlets	1.87	2.50	2.87	4.05
Cross, Reducing	1.87	2.50	3.00	4.05

Special Brass or Bronze Rail Brackets.

Made to Fit Rails from 1¼ to 2½ Inches.

PRICES ON APPLICATION.


No. 107.


No. 104.


No. 105.


No. 106.


No. 103.


No. 108.


No. 102.


No. 114.


No. 113.


No. 117.


No. 101.


No. 109.


No. 115.


No. 116.


No. 110.


No. 111.


No. 112.

Brass Railings.

Brass Railing and Telescope Gate.



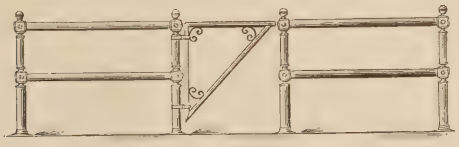
No. 202.
2-inch Rail, 2-inch Standard, 1¾-inch Telescope Gate.
One Standard every 5 feet.

Brass Railing and Swing Gate.



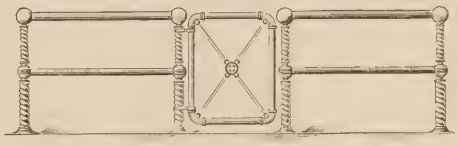
No. 205.
2-inch Rail, 2-inch Standard, Swing Gate.
One Standard every 5 feet.

Brass Railing and Swing Gate.



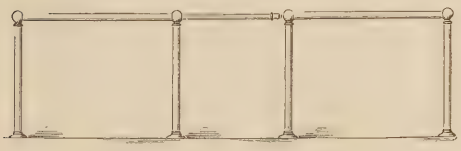
No. 206.
2-inch Top, 1¾-inch Center, 2¼-inch Standard, Swing Gate.
One Standard every 5 feet.

Brass Railing and Swing Gate.



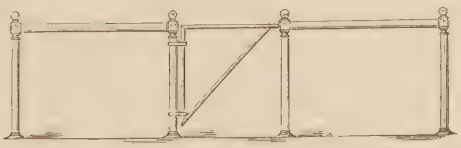
No. 211.
2-inch Top, 1¾-inch Center, 2¼-inch Standard, Swing Gate.
One Standard every 5 feet.

Brass Railing and Telescope Gate.



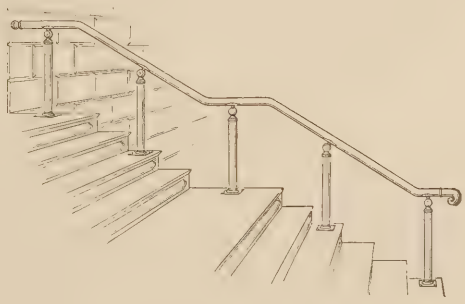
No. 201.
1½-inch Rail, 1½-inch Standard, 1¼-inch Telescope Gate.
One Standard every 5 feet.

Brass Railing and Swing Gate.



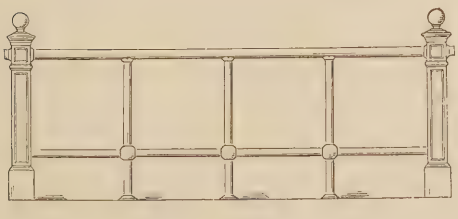
No. 204.
2-inch Rail, 2-inch Standard, Swing Gate.
One Standard every 5 feet.

Brass or Bronze Stoop Railing.



No. 217
2-inch or 2¼-inch Rail, 2-inch Standards.

Bronze Area Railing.



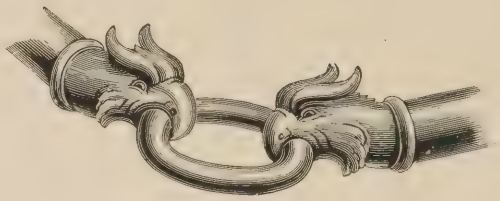
No. 216.
2½-inch Top, 2-inch Center Rails, 5 x 5 x 60-inch Standards.

NOTE.—Net prices for brass rails will be quoted on specification of design, size tubing and length.

The Nason "Griffin" Foot Rail Bracket and Fixtures.



"GRIFFIN"
FOOT RAIL BRACKET.



"GRIFFIN"
CORNER FIXTURE.

It has been our aim in designing the "Griffin Foot Rail Bracket," as illustrated herewith, to produce an article artistic in design, and fitted in form so as to bear the heaviest strain with the least possible chance of disarrangement, while at the same time a model of lightness.

It is almost impossible to fasten the foot rail to the bar itself and render it thoroughly secure and permanent; but with the "Griffin" Bracket this object is secured, as the support comes from the floor, and is directly under the line of the heaviest strain, whereas, in the other case, the foot-rest itself acts as a lever to loosen its own support.

Their design is artistic, and their lightness and beauty of form is such that they add to, and improve the appearance of, the most handsomely fitted-up surroundings; while in point of cleanliness they far surpass the gaping "Y" support now so commonly used, as they present no interstices where dirt of any kind can gather.

It may be mentioned that where rails with the old form of Bracket are in use, the latter can be removed and substituted with the "Griffin" pattern without discarding the rail, and considerable expense be thus saved, while the handsome effect of a new rail will be given. We manufacture them in plain or galvanized iron, bronze and brass, and will furnish them at the following prices.

These Brackets are made with heads to carry either 1-inch standard pipe measuring 1.31 inches outside diameter, or 1¼-inch standard pipe measuring 1.66 outside diameter, and the end and corner fixtures are threaded for both 1-inch and 1¼-inch, as may be required.

Prices for 1¼-inch sizes on application.

"Griffin" Brackets and Fixtures for one-inch Standard Pipe.

	Plain Iron.	Bronzed Iron.	Galvanized Iron.	Artistic Brass.
Brackets	.50	.85	.85	3.50
Corner Fittings	.50	.75	.75	3.00
End Finish Fittings	.15	.25	.25	1.40
Acorn End Pieces	.10	.18	.18	.65
Rosette for Railing	.08	.15	.15	.50



ACORN.
End Finish.



ORNAMENTAL ROSETTE.
For Wall Finish.



"GRIFFIN."
End Finish.

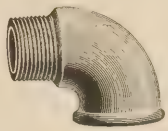
Brass Fittings—Malleable Iron Pattern.



BRASS ELBOW.



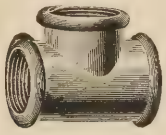
BRASS ELBOW 45°.



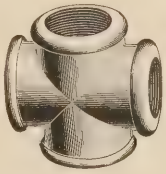
STREET ELBOW.

Brass Elbows, 45° Elbows and Street Elbows, Malleable Iron Pattern, Rough and Finished.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Brass Elbows, Rough	.12	.17	.21	.28	.35	.50	.85	1.10	1.50	3.50	4.50	7.00	10.00
" " Finished	.24	.34	.42	.56	.70	1.00	1.70	2.20	3.00	7.00	9.00	14.00	20.00
" 45° Elbows, Rough	....	.20	.25	.35	.50	.75	1.15	1.50	2.25	4.25	7.00	9.00	10.00
" " " Finished	....	.40	.50	.70	1.00	1.50	2.30	3.00	4.50	8.50	14.00	18.00	20.00
" Street Elbows, Rough	....	....	....	.55	.75	1.00	1.80	2.25	3.50	....	....	....	....
" " " Finished	....	....	....	.83	1.10	1.50	2.65	4.50	7.00	....	....	....	....
" Elbows, Reduc., Rough, not illus	....	.22	.26	.35	.45	.62	1.10	1.40	1.90	4.40	5.65	8.75	12.50
" " " Finished, not illus	....	.44	.52	.70	.90	1.25	2.20	2.80	3.80	8.80	11.30	17.50	25.00
" " Side Outlet, Rough, not illus	....	....	.25	.40	.45	.75	1.50	1.80	....	....	....	....	....
" " " " Finished, not illus	....	....	.50	.80	.90	1.50	3.00	3.60	....	....	....	....	....



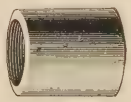
BRASS TEE.



BRASS CROSS.

Brass Tees and Crosses, Malleable Pattern, Rough and Finished.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Brass Tees, Rough	.15	.20	.30	.40	.50	.75	1.00	1.30	1.75	4.00	5.50	9.00	13.00
" " Finished	.30	.40	.60	.80	1.00	1.50	2.00	2.60	3.50	8.00	11.00	18.00	26.00
" Cross, Rough	.25	.30	.40	.50	.60	.80	1.50	2.00	3.50	5.00	7.00	10.00	14.50
" " Finished	.53	60	.80	1.00	1.20	1.60	3.00	4.00	7.00	10.00	14.00	20.00	29.00
" Tees, Reducing, Rough, not illus	....	.25	.38	.50	.63	.95	1.25	1.65	2.20	5.00	6.90	11.25	16.25
" " " Finished, not illus	....	.50	.76	1.00	1.25	1.90	2.50	3.30	4.40	10.00	13.80	22.50	32.50
" Cross, " Rough, not illus	....	.38	.50	.65	.75	1.00	1.90	2.50	4.40	6.25	8.75	12.50	18.00
" " " Finished, not illus	....	.75	1.00	1.30	1.50	2.00	3.80	5.00	8.80	12.50	17.50	25.00	36.00



BRASS COUPLING.
Right Hand.



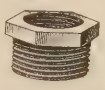
BRASS COUPLING.
Right and Left.

Brass Couplings, Right Hand and Right and Left, Malleable Pattern, Rough and Finished.

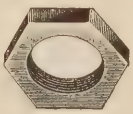
Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Brass Couplings, Right Hand, Rough	.10	.14	.16	.25	.37	.50	.60	.90	1.35	2.40	3.50	5.00	6.00
" " " " Finished	.20	.28	.32	.50	.75	1.00	1.20	1.80	2.70	4.80	7.00	10.00	12.00
" " Right and Left, Rough	....	.17	.20	.30	.45	.60	.75	1.12	1.75	....	....	....	....
" " " " " Finished	....	.31	.36	.55	.82	1.10	1.35	2.00	3.10	....	....	....	....



BRASS PLUG.



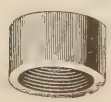
BRASS BUSHING.



BRASS LOCKNUT.



BRASS REDUCER.



BRASS CAP.

Brass Plugs, Bushings, Locknuts, Reducers and Caps, Malleable Pattern, Rough and Finished.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Brass Plug, Rough	.09	.10	.12	.15	.20	.28	40	.50	.90	1.25	2.00	3.00	4.00
" " Finished	.18	.20	.24	.30	.40	.56	.80	1.00	1.80	2.50	4.00	6.00	8.00
" Bushing, Rough	....	.10	.12	.14	.21	.38	.50	.67	1.00	1.50	2.50	....	....
" " Finished	....	.20	.24	.28	.42	.76	1.00	1.35	2.00	3.00	5.00	....	
" Locknut, Rough	....	.10	.12	.15	.20	.30	.45	.70	.95	1.50	2.75	....	....
" " Finished	....	.20	.24	.30	.40	.60	.90	1.40	1.90	3.00	5.50	....	....
" Reducer, Rough	....	.16	.22	.32	.45	.65	.90	1.12	1.85	3.00	4.50	....	....
" " Finished	....	.32	.44	.64	.90	1.30	1.80	2.25	3.70	6.00	9.00	....	....
" Cap, Rough	.15	.15	.20	.25	.35	.45	.60	.80	1.10	2.00	3.00	....	....
" " Finished	.30	.30	.40	.50	.70	.90	1.20	1.60	2.20	4.00	6.00	....	....

Brass Fittings and Nipples.



BRASS RETURN BEND.
Open Pattern.



BRASS RETURN BEND.
Close Pattern.

Rough and Finished Brass Return Bends—Malleable Pattern.

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Brass O. P. Return Bends, Rough	.40	.50	1.00	1.35	2.00	3.00	4.50	8.20	11.00
" " " " Finished	.80	1.00	2.00	2.70	4.00	6.00	9.00	13.45	17.80
" C. P. " " Rough	.35	.40	.75	1.15	1.65	2.50	4.00	6.00	8.00
" " " " Finished	.70	.80	1.50	2.30	3.30	5.00	8.00	11.00	14.45



BRASS UNION.

Rough and Finished Brass Ground Joint Unions.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Brass Unions, Rough	.35	.40	.55	.75	1.00	1.40	1.90	2.75	4.00	6.50	8.50
" " Finished	.32	.36	.50	.70	.90	1.25	1.70	2.50	3.60	6.00	7.75

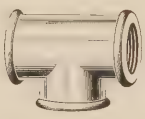
Nickel Plated Brass Fittings—Iron Pipe Thread.



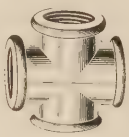
N. P. BRASS
ELBOW.



N. P. BRASS 45°
ELBOW.



N. P. BRASS
TEE.



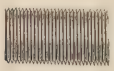
N. P. BRASS
CROSS.



N. P. BRASS
COUPLING.

Nickel Plated Brass Elbows, 45° Elbows, Tees and Couplings.

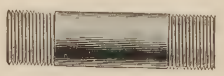
Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
N. P. Brass Elbow	.32	.44	.56	.72	.86	1.20	1.90	2.40	3.20	7.25	9.30	14.50	20.75
" " 45° Elbow	.44	.50	.64	.86	1.16	1.60	2.30	3.00	3.80	7.75	12.30	----	----
" " Tee	.40	.52	.76	.98	1.18	1.73	2.25	2.85	3.75	8.30	11.35	18.60	26.80
" " Crosses	.65	.76	1.00	1.22	1.42	1.88	3.30	4.35	7.40	10.45	14.55	20.80	30.00
" " Coupling	.28	.38	.45	.63	.89	1.15	1.40	2.00	2.90	5.05	7.30	10.40	12.50



BRASS CLOSE NIPPLE.



BRASS SHOULDER NIPPLE.

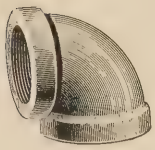


BRASS LONG NIPPLE.

Brass Close, Shoulder and Long Nipples.

Size.	Close.	Length, Inches. 1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
1/8	.16	.16	.19	.22	.25	.28	.31	.34	.37	.40	.43
1/4	.20	.20	.24	.28	.32	.36	.40	.44	.48	.52	.56
3/8	.23	.23	.28	.33	.38	.43	.48	.53	.58	.63	.68
1/2	.30	.30	.36	.42	.48	.54	.60	.66	.72	.78	.84
3/4	.32	----	.39	.46	.53	.60	.67	.74	.81	.88	.95
1	.40	----	.49	.58	.67	.76	.85	.94	1.03	1.12	1.21
1 1/4	.63	----	----	.75	.87	.99	1.11	1.23	1.35	1.47	1.59
1 1/2	.74	----	----	.88	1.02	1.16	1.30	1.44	1.58	1.72	1.86
2	1.00	----	----	1.19	1.38	1.57	1.76	1.95	2.14	2.33	2.52
2 1/2	1.80	----	----	----	2.04	2.32	2.60	2.88	3.16	3.44	3.72
3	2.50	----	----	----	2.80	3.20	3.60	4.00	4.40	4.80	5.20
3 1/2	4.00	----	----	----	----	----	5.10	5.68	6.26	6.84	7.42
4	4.75	----	----	----	----	----	5.86	6.53	7.20	7.87	8.54
4 1/2	6.00	----	----	----	----	----	7.20	8.01	8.82	9.63	10.44
5	8.50	----	----	----	----	----	----	10.30	11.35	12.40	13.45
6	11.50	----	----	----	----	----	----	13.65	15.05	16.45	17.85

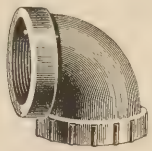
Rough Brass Fittings Cast Iron Pattern.



BRASS ELBOW.



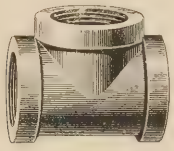
BRASS ELBOW 45°.



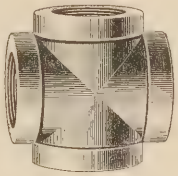
BRASS RIGHT AND LEFT ELBOW.

Rough Brass Elbows—Cast Iron Pattern.

Size	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Brass Elbow	.36	.50	.85	1.05	1.65	2.10	3.00	5.50	8.50	10.50	12.00	15.00	18.00	27.00
" 45° Elbow	---	.45	.70	1.20	1.65	2.00	3.00	5.50	8.50	10.50	12.00	15.00	18.00	27.00
" R. & L. Elbow	.32	.42	.80	1.15	1.72	2.30	3.45	6.30	9.75	----	--	----	----	----
" Reducing Elbow, not illus.	.42	.58	.95	1.20	1.90	2.40	3.45	6.30	9.75	12.00	13.75	17.25	20.70	31.00



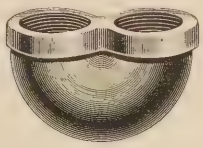
BRASS TEE.



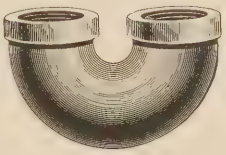
BRASS CROSS.

Rough Brass Tees and Crosses—Cast Iron Pattern.

Size	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Brass Tee	.40	.65	1.00	1.50	2.00	3.00	4.50	7.50	11.00	13.00	15.50	20.00	25.00	34.00
" Cross	---	.90	1.30	1.80	2.75	4.00	5.25	9.00	14.00	17.00	19.00	26.00	30.00	48.00
" Reducing Tee, not illus.	.46	.75	1.15	1.70	2.30	3.45	5.20	8.60	12.50	15.00	17.50	23.00	28.00	30.00
" " Cross " "	---	1.04	1.50	2.10	3.15	4.60	6.00	10.35	16.00	19.50	21.50	29.00	34.00	55.00



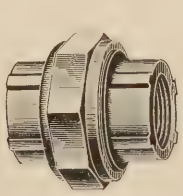
BRASS RETURN BEND.
Close Pattern.



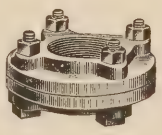
BRASS RETURN BEND.
Open Pattern.

Rough Brass Return Bends—Cast Iron Pattern.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Brass Return Bend, C. P.	1.00	1.15	1.50	2.30	3.30	4.50	9.00	13.00	18.00	23.00
" " " O. P.	1.00	1.25	2.00	3.25	4.50	6.00	9.25	15.50	19.00	25.00



ROUGH BRASS UNION.
Heavy.

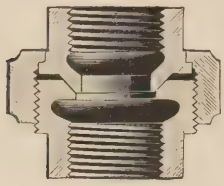


BRASS FLANGE UNION.

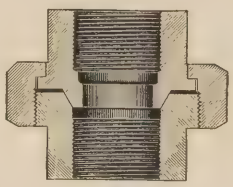
Rough Brass Heavy Unions and Flange Unions.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Brass Ground Joint Union, Rough	.70	.92	1.15	1.70	2.50	3.50	5.00	7.15	10.00	14.60	25.00	----
" Flange Union	---	---	1.60	1.80	2.60	3.40	4.60	7.20	9.60	12.00	14.40	16.00

Eastwood Bronze Fittings for Marine and Electric Light Service.



STANDARD UNION.

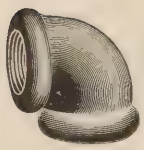


EXTRA HEAVY UNION.

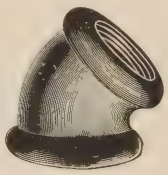
Unions.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Standard Pattern, Rough	.45	.50	.65	.85	1.10	1.65	2.00	2.80	4.15	6.15	8.65
" " Polished	.70	.75	1.00	1.30	1 65	2.50	3.00	4.20	6.25	9.25	12.95
Extra Heavy Pattern, Rough	.55	.60	.80	1.05	1.40	1.80	2.60	3.80	4.80	7.00	11.00
" " " Polished	.80	.90	1.20	1.60	2.10	2.70	3.90	5.70	7.20	10.50	16.50

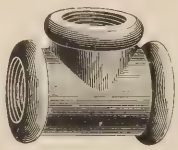
Bronze Fittings.



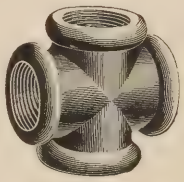
ELBOW.



45° ELBOW.



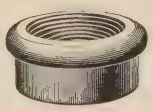
TEE.



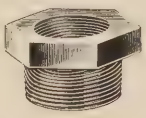
CROSS.



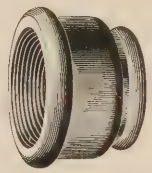
COUPLING.



CAP.



BUSHING.



REDUCER.

Standard Bronze Fittings.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Elbows	.12	.17	.21	.28	.35	.50	.85	1.10	1.50	3.50	4.50	7.00	10.00
45° Elbows	-- -	.25	.30	.40	.50	.75	1.25	1.65	2.25	5.25	6.75	10.50	15.00
Tees	.15	.20	.30	.40	.50	.75	1.00	1.30	1.75	4.00	5.50	9.00	13.00
Crosses	.25	.30	.40	.50	.60	.80	1.50	2.00	3.50	5.00	7.00	10.00	14.50
Couplings	.10	.14	.16	.25	.37	.50	.60	.90	1.35	2.40	3.50	5.00	7.00
Reducers	----	.16	.22	.32	.45	.65	.90	1.12	1.85	3.00	4.50	----	----
Caps	.15	.15	.20	.25	.35	.45	.60	.80	1.10	2.00	3.00	----	----
Plugs	.09	.10	.12	.15	.20	.28	.40	.50	.90	1.25	2.00	3.00	4.00
Lock Nuts	.10	.10	.12	.15	.20	.30	.45	.70	.95	1.50	2.75	----	----
Bushings	----	.10	.12	.14	.21	.38	.50	.67	1.00	1.50	2.50	----	----
Close Nipples	.12	.15	.20	.25	.30	.40	.60	.90	1.25	2.50	3.50	- --	----
" Hex. Center	Special net prices.												

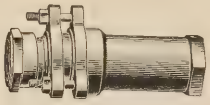
Extra Heavy Bronze Fittings.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Elbows	.20	.25	.35	.50	.75	1.00	1.35	2.80	3.25	4.35	5.85	9.80	14.60
45° Elbows	.20	.25	.40	.60	.80	1.15	1.45	2.95	3.45	4.80	6.40	10.90	16.20
Tees	.30	.40	.60	.75	1.05	1.50	1.85	2.90	4.35	6.40	8.40	14.80	19.10
Crosses	.45	.60	.75	.90	1.30	1.80	2.75	4.00	5.25	9.00	14.00	19.00	29.00
Couplings	.10	.15	.20	.25	.45	.65	.85	1.25	1.65	2.65	4.30	6.85	9.50
Reducers, 1 size	----	.20	.25	.35	.55	.75	1.00	1.50	1.95	3.20	5.15	7.85	10.90
Close Nipples	.10	.10	.20	.30	.40	.50	.70	1.00	1.45	1.90	2.15	3.60	5.40
Caps	.10	.15	.20	.25	.35	.45	.60	.85	1.25	2.20	3.20	5.50	7.65
Plugs	.09	.10	.12	.18	.25	.35	.55	.70	1.10	1.65	2.60	3.80	5.40
Bushings, 1 size	----	.12	.15	.20	.35	.45	.70	.85	1.30	1.80	2.70	3.85	6.10
" 2 "	----	----	.15	.25	.45	.55	.80	1.00	1.50	2.05	2.90		----
" 3 "	----	----	----	.30	.55	.60	.90	1.10	1.60	2.20	3.00	----	- -
" 4 "	----	----	----	----	.65	.70	1.00	1.20	1.75	2.45	3.20	----	----
Lock Nuts	.10	.10	.12	.18	.25	.35	.50	.75	1.00	1.60	2.95	3.90	5.80
Flanged Unions	----	1.90	2.00	2.20	2.40	2.60	3.45	4.00	5.50	8.50	11.70	15.00	19.00
Return Bends, C. P	----	----	----	----	1.15	2.00	4.00	5.00	6.75	10.00	18.00	21.00	27.00
" " O. P	----	----	----	.75	1.20	2.50	4.50	5.75	7.50	11.00	21.00	24.00	31.00

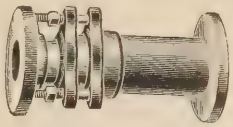
Expansion Joints.



EXPANSION JOINT,
Brass, Screwed.



EXPANSION JOINT,
Iron Body, Screwed.



EXPANSION JOINT,
Iron Body, Flanged.

Expansion Joints, Brass, Screwed.

Size	½	¾	1	1¼	1½	2	2½	3
Eastern Traverse	4	4½	4¾	4¾	5	5½	5¾	6½
Each	3.80	4.00	4.90	6.30	7.40	9.10	24.00	45.00

Expansion Joints, Iron Body, Screwed.

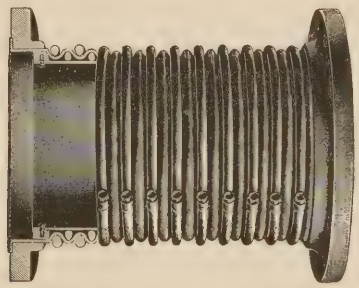
Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Traverse	6	6	6	6	6	6	6	6	6	7	7	7	8
Each	11.00	13.00	17.50	25.00	30.00	40.00	45.00	55.00	70.00	100.00	110.00	160.00	225.00

Expansion Joints, Iron Body, Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Traverse	6	6	6	6	6	6	6	6	6	7	7	7	8
Diam. Flange	6	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19
Each	18.00	20.00	25.00	35.00	40.00	50.00	55.00	65.00	80.00	110.00	120.00	175.00	250.00

NOTE.—Standard Traverse will be furnished unless otherwise ordered.

Wainwright Corrugated Expansion Joint.



WAINWRIGHT EXPANSION JOINT.

Each Joint will care for the movement by expansion in 45 feet of piping with 100 lbs. pressure. In exhaust lines each Joint will care for 100 feet.

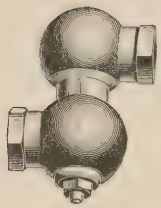
It is important that pipes shall be securely anchored on both sides of the Joint.

These Joints are guaranteed, when installed according to directions, and customers making inquiries are requested to submit all conditions under which Joint is to operate.

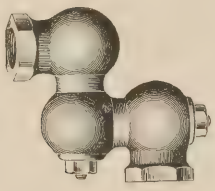
Wainwright Corrugated Expansion Joints.

Size	1½	2	2½	3	3½	4	4½	5
Face to Face	12	12	12	12	16	16	16	16
Diameter Flanges	6	6	7	7½	8½	9	9¼	10
Maximum Movement	2	2	2	2	2	2	2	2
Approximate Weight	22	24	27	33	37	48	52	59
Each	25.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00
Size	6	7	8	9	10	12	14	16
Face to Face	18	18	18	18	24	24	30	30
Diameter Flanges	11	12½	13½	15	17	19	21	23½
Maximum Movement	2¼	2¼	2¼	2¼	2½	2½	2½	2½
Approximate Weight	65	91	120	150	180	225	280	350
Each	75.00	90.00	125.00	135.00	165.00	225.00	300.00	400.00

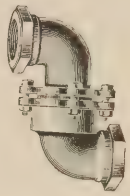
Steam Swing Joints.



STEAM SWING JOINT.
Brass.



UNIVERSAL STEAM SWING JOINT.
Brass.



STEAM SWING JOINT.
Iron.

Steam Swing Joints—Brass.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½
Each	1.00	1.25	1.75	2.40	3.50	4.50	6.25	9.00	22.00

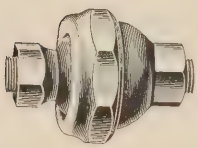
Universal Steam Swing Joints—Brass.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½
Each	2.00	2.50	3.50	4.80	7.00	9.00	12.50	18.00	44.00

Steam Swing Joints—Iron.

Size	3	6
Each	11.00	73.00

The Moran Flexible Steam or Liquid Joint.



MORAN FLEXIBLE JOINT.

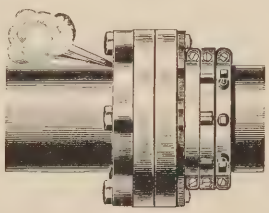
Adapted for steam, water and air connections between engine and tender; pneumatic hoist and traveling crane connections; for flexible lines of pipe to rock drills; suction and discharge pipes on dredge boats; loading and unloading oil boats; for pipe lines across streams or bodies of water, for saw mills using a steam nigger; laundry mangles and temporary steam lines. It can be adapted to stand any desired pressure with perfect safety.

The Moran Flexible Joints.

Size	⅜	½	¾	1	1¼	1½	2	2½	3	4	5	6
Each	3.00	3.25	3.75	4.25	5.25	6.00	7.50	9.00	11.25	15.00	18.75	25.00

Larger sizes to 24-inch quoted on application.

The "Climax" Steam Joint Clamp.



THE "CLIMAX" STEAM JOINT CLAMP.

These Clamps are made in halves held together by cap screws and can be easily attached to pipe, making a cheap and effectual appliance for stopping leaks against any steam pressure.

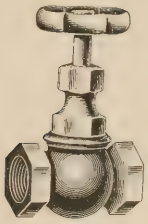
They can be attached in a few minutes, and occupy but 2½ inches of space on the pipe.

Pipe covering can be readily replaced after joint is applied.

The "Climax" Steam Joint Clamps.

Size	¾	1	1¼	1½	2	2½	3	3½	4	4½	5
Each	1.50	1.50	1.90	2.25	3.00	3.75	4.50	5.25	6.00	6.75	7.50
Size	6	7	8	9	10	12	14	15	16	18	20
Each	9.00	10.50	13.00	15.75	18.75	22 50	31.50	33.75	36.00	40.50	45.00

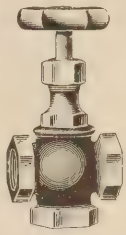
Standard Brass Valves.



GLOBE VALVE.
Screwed.



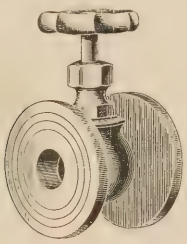
ANGLE VALVE.
Screwed.



CROSS VALVE.
Screwed.

Standard Brass Globe, Angle and Cross Valves—Screwed.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Globe and Angle Valves	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40	26.50	36.00
Cross Valves	----	1.25	1.25	1.50	2.00	2.50	3.50	5.00	8.00	16.00	24.00	45.00	60.00



GLOBE VALVE.
Flanged.



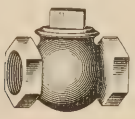
ANGLE VALVE.
Flanged.



CROSS VALVE.
Flanged.

Standard Brass Globe, Angle and Cross Valves—Flanged.

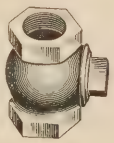
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Globe and Angle Valves	4.50	5.00	6.75	8.50	10.50	16.00	23.00	35.00	50.00	70.00	125.00	200.00
Cross Valves	5.25	7.00	9.00	12.00	15.75	22.00	33.00	45.00	75.00	100.00	----	----



HORIZONTAL CHECK VALVE.



VERTICAL CHECK VALVE



VERTICAL CHECK VALVE.
Cap on Side.



ANGLE CHECK VALVE.

Standard Brass Check Valves—Screwed.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Horizontal Check	.65	.65	.70	.90	1.15	1.60	2.25	3.15	4.75	9.00	13.00	24.00	32.50
Vertical "	--	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40	26.50	36.00
Vertical, Cap on Side	--	--	--	1.85	2.50	3.25	4.15	5.00	7.25	18.00	25.00	----	----
Angle Check	--	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40	26.50	36.00



HORIZONTAL CHECK VALVE.
Flanged.



ANGLE CHECK VALVE.
Flanged.

Standard Brass Check Valves—Flanged.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Horizontal Check	4.40	4.90	6.50	8.25	10.15	15.50	22.00	33.50	47.50	66.50	----	----
Vertical and Angle Checks	4.50	5.00	6.75	8.50	10.50	16.00	23.00	35.00	50.00	70.00	125.00	200.00

Standard Brass Valves—Extra Heavy.



EXTRA HEAVY GLOBE VALVE.
Screwed.



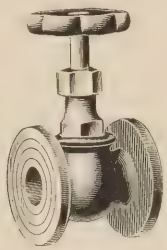
EXTRA HEAVY ANGLE VALVE.
Screwed.



EXTRA HEAVY CHECK VALVE.
Screwed.

Extra Heavy Standard Brass Globe, Angle and Check Valves—Screwed.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Globe and Angle Valves	1.25	1.45	1.85	2.50	3.50	5.25	7.00	10.50	20.00	27.00	50.00	65.00
Check Valve	1.10	1.30	1.65	2.20	3.00	4.75	6.25	9.50	18.50	25.00	47.00	60.00



EXTRA HEAVY GLOBE VALVE.
Flanged.



EXTRA HEAVY ANGLE VALVE.
Flanged.

Extra Heavy Standard Brass Globe and Angle Valves—Flanged.

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Diameter of Flanges	4 1/2	5	6	6 1/2	7 1/2	9	9	10
Face to Face, Globe	3 7/16	3 13/16	4 5/8	5 3/8	5 15/16	6 9/16	8 1/4	8 7/8
Center to Inlet, Angle	2 9/16	2 3/4	2 15/16	4	4 1/2	5	5 1/4	6
" " Outlet, "	2 3/8	2 5/8	3	3 3/8	4	4	4 1/4	5
Each	9.50	13.50	16.50	24.00	45.00	65.00	95.00	120.00

Finished Brass Valves.



FINISHED GLOBE VALVE.
Brass Wheel.



FINISHED GLOBE VALVE.
Wood Wheel.

Standard Brass Valves—Finished.

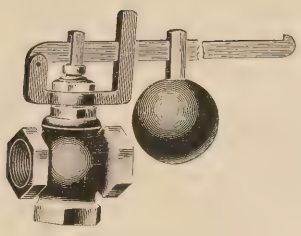
Size	1/2	3/4	1	1 1/4	1 1/2	2
Globe and Angle Valves, Brass Wheel	3.15	3.50	4.25	5.60	7.00	10.25
" " " " Wood "	2.15	2.50	3.25	4.35	5.75	9.00
Check Valves, Finished	2.15	2.50	3.25	4.35	5.75	9.00

Extra Heavy Finished Globe and Angle Valves.

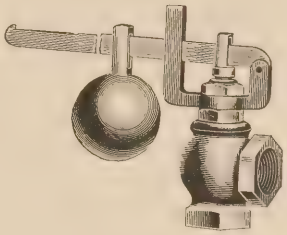
Size	1/2	3/4	1	1 1/4	1 1/2	2
Globe and Angle Valves, with Brass Wheel	4.00	4.75	5.95	8.35	10.50	15.45
" " " " " Wood "	3.00	3.75	4.95	7.10	9.25	14.20

Finished Valves are furnished to order only.

Brass Valves.



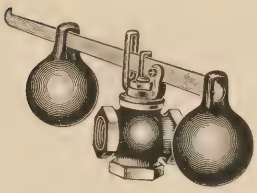
GLOBE SAFETY VALVE.



ANGLE SAFETY VALVE.

Standard Brass Globe and Angle Safety Valves.

Size	½	¾	1	1¼	1½	2	2½	3
Globe and Angle, Screwed	3.25	3.90	4.70	7.15	9.00	12.50	22.50	33.50
" Valve, Flanged	7.00	8.90	11.20	15.50	19.75	26.50	39.50	54.50
Angle " "	6.75	7.65	9.65	13.15	16.00	23.30	35.50	53.00



WITH BALANCE WEIGHTS.

Low Pressure Safety Valve with Balance Weights.

Size	½	¾	1	1¼	1½	2
Each	3.00	3.75	5.50	7.75	9.50	12.35



Fig. 133.
VACUUM VALVE.



Fig. 337.
BALL ON TOP.

Vacuum Valves.

Size	½	¾	1	1¼
Fig. 133	1.50	2.00	2.50	3.00



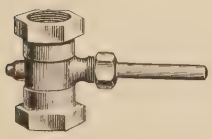
Fig. 131.
LOW PRESSURE SAFETY VALVE.



Fig. 338.
ANGLE PATTERN.

Low Pressure Safety Valves.

Size	½	¾	1	1¼	1½	2
Fig. 337	1.50	2.25	3.00	4.00	5.50	7.75
" 131	1.50	2.00	2.50	3.00	----	----
" 338	2.25	2.60	3.30	4.50	6.35	8.65



BUTTERFLY VALVE.

Butterfly Valves.

Size	¾	1	1¼	1½	2	2½	3
Each	3.10	4.40	5.65	6.75	10.00	13.75	21.00

Gas Log Valves—Rough Body, Wood Wheel.

Size	¼	⅜	½
Plain	2.20	2.25	2.50
Plated Trimmings	2.50	2.55	2.80

An extra charge is made for Stems longer than 6 inches.



GAS LOG VALVE.

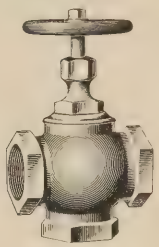
Standard Iron Body Valves—Brass Mounted.



GLOBE, PLAIN TOP, SCREWED.



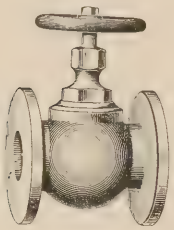
ANGLE, PLAIN TOP, SCREWED.



CROSS VALVE, PLAIN TOP, SCREWED.

Standard Iron Body Valves—Screwed, Plain Top.

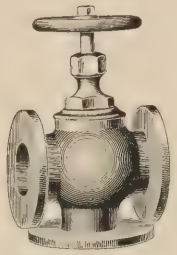
Size	1	1¼	1½	2	2½	3
Globe and Angle	2.25	2.75	3.50	5.40	7.35	9.80
Cross Valve	----	----	----	6.50	9.00	12.50



GLOBE, PLAIN TOP, FLANGED.



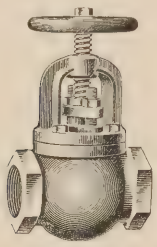
ANGLE, PLAIN TOP, FLANGED.



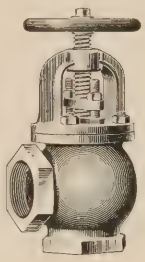
CROSS VALVE, PLAIN TOP, FLANGED.

Standard Iron Body Valves—Flanged, Plain Top.

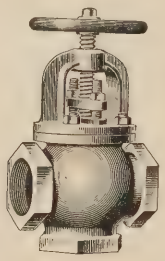
Size	1	1¼	1½	2	2½	3
Globe and Angle	3.25	3.85	4.80	7.00	9.00	12.50
Cross Valves	----	----	----	9.00	11.75	16.50



GLOBE, YOKE TOP, SCREWED.



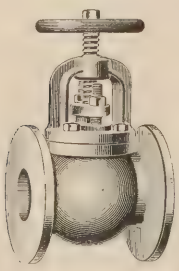
ANGLE, YOKE TOP, SCREWED.



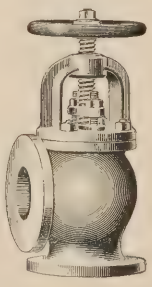
CROSS VALVE, YOKE TOP, SCREWED.

Standard Iron Body Valves—Screwed, Yoke Top.

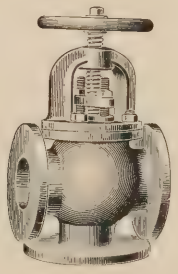
Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe and Angle	7.00	9.00	12.50	15.25	19.00	24.00	27.00	37.50	63.00	72.00	100.00	114.00	170.00
Cross Valve	8.50	11.75	16.25	20.00	23.50	30.65	35.25	47.25	78.00	92.00	150.00	162.00	240.00



GLOBE, YOKE TOP, FLANGED.



ANGLE, YOKE TOP, FLANGED.



CROSS VALVE, YOKE TOP, FLANGED.

Standard Iron Body Valves—Flanged, Yoke Top.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	16
Globe and Angle	8.60	10.75	15.00	18.50	22.50	27.50	31.00	42.00	68.00	77.00	110.00	123.00	187.00	350.00	475.00
Cross Valves	11.00	14.50	20.00	25.00	28.50	36.00	41.00	54.00	85.00	100.00	163.00	175.00	265.00	475.00	700.00

Standard Iron Body Valves.



HORIZONTAL CHECK VALVE.
Screwed.



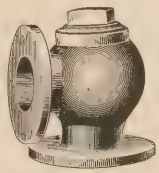
ANGLE CHECK VALVE.
Screwed.

Iron Body Horizontal and Angle Check Valves—Screwed.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Each	3 60	6.50	8.90	12.25	14.25	19.00	22.00	30.00	45.00	57 00	105.00	155.00



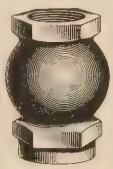
HORIZONTAL CHECK VALVE.
Flanged.



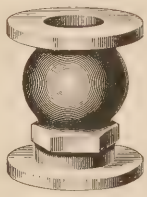
ANGLE CHECK VALVE.
Flanged.

Iron Body Horizontal and Angle Check Valves—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16
Each	5.25	8.25	11.50	15.50	18.00	22.50	26.00	35.00	50.00	62.00	115.00	175.00	300.00	425.00



VERTICAL CHECK VALVE.
Screwed.



VERTICAL CHECK VALVE.
Flanged.

Iron Body Vertical Check Valves—Screwed and Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8
Screwed, each	7.00	9.50	12.50	17.00	21.00	30.00	33.00	40.00	62.00	73.00
Flanged, "	8.75	11.50	15.00	20.00	25.00	33.50	37.00	45.00	67.00	78.00



SWING CHECK VALVE.
Screwed.

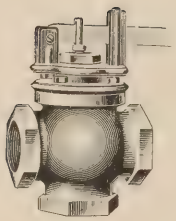


SWING CHECK VALVE.
Flanged.

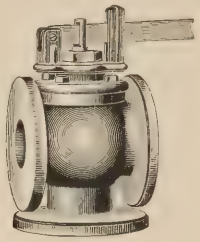
Iron Body Swing Check Valves—Brass Disc, Leather Seat.

Size	2½	3	3½	4	5	6
Screwed, each	10.00	12.00	16.00	18.00	25.00	32.00
Flanged, "	10.00	12.00	16.00	18.00	25.00	32.00

Standard Iron Body Valves.



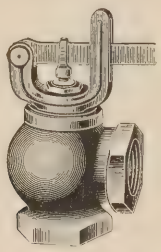
GLOBE SAFETY VALVE.
Screwed.



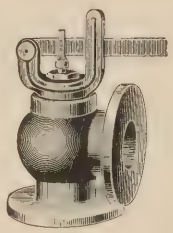
GLOBE SAFETY VALVE.
Flanged.

Iron Body Globe Safety Valves—Screwed and Flanged.

Size	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Screwed	4.00	5.00	5.80	7.80	13.25	17.25	23.00	28.75	34.50	41.50	57.75	93.50	132.00
Flanged	5.50	6.75	7.75	10.25	16.00	21.50	27.50	34.00	40.00	48.00	65.00	100.00	140.00



ANGLE SAFETY VALVE.
Screwed.

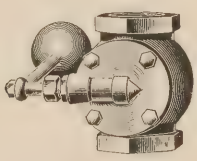


ANGLE SAFETY VALVE.
Flanged.

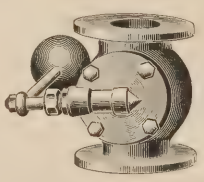
Iron Body Angle Safety Valves—Screwed and Flanged.

Size	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Screwed	4.00	5.00	5.80	7.80	13.25	17.25	23.00	28.75	34.50	41.50	57.75	93.50	132.00
Flanged	5.50	6.75	7.75	10.25	16.00	21.50	27.50	34.00	40.00	48.00	65.00	100.00	140.00

NOTE.—Safety Valves with bottom opening flanged and side opening screwed, same list as flanged.



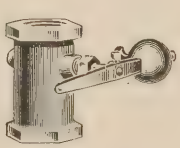
BACK PRESSURE VALVE.
Screwed.



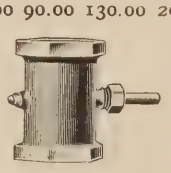
BACK PRESSURE VALVE.
Flanged.

Iron Body Back Pressure Valves—Screwed and Flanged.

Size	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16
Screwed	9.00	11.00	13.00	15.00	19.00	22.50	28.50	33.50	43.00	70.00	85.00	120.00	180.00	----	----
Flanged	10.50	12.75	15.00	17.50	22.00	26.00	32.00	37.00	47.00	75.00	90.00	130.00	200.00	350.00	475.00



BACK PRESSURE BUTTERFLY VALVE.



BUTTERFLY VALVE.

Iron Body Butterfly Valves.

Size	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
B. P. Butterfly Valve, Scd.	----	----	11.00	13.00	15.00	19.00	22.50	28.50	33.50	43.00	70.00	85.00	120.00	180.00
" " " Flgd	----	----	----	15.00	17.50	22.00	26.00	32.00	37.00	47.00	75.00	90.00	130.00	200.00
Butterfly Valve, Scd.	6.35	7.00	8.00	9.50	12.00	16.00	18.50	----	28.50	42 50	----	----	----	----
" " Flgd	----	----	----	11.50	15.00	19.00	22.00	----	32.00	47.00	----	----	----	----

Foot Valves and Strainers.



Fig. 187.
IRON BODY FOOT VALVE.
1 to 3 inch.



Fig. 187B.
IRON BODY FOOT VALVE.
Screwed.



Fig. 187C.
IRON BODY FOOT VALVE.
Flanged.

Iron Body Foot Valves.

Size	1	1¼	1½	2	2½	3	3½	4	4½	5	6	8	10	12	14	16
Fig. 187	1.30	1.40	1.90	2.40	3.30	3.90	----	----	----	----	----	----	----	----	----	----
" 187B	----	----	----	----	----	----	5.60	7.30	10.50	11.25	14.75	41.00	64.00	100	----	
" 187C	----	----	----	3.50	4.50	5.75	7.50	9.50	13.00	14.00	17.50	45.00	70.00	112	150	200



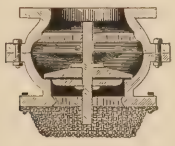
Fig. 192A.
FOOT VALVE.
Screwed.



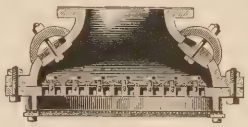
Fig. 192B.
FOOT VALVE.
Flanged.

Iron Body Foot Valves.

Size	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12
Fig. 192A. Plain	.44	.52	.68	.90	1.30	1.85	2.60	2.80	4.25	7.00	16.00	29.00	58.00
" 192A. Galvanized	.60	.75	1.00	1.45	2.00	2.70	3.00	4.25	6.50	10.00	30.00	50.00	90.00
" 192B. Plain	----	----	----	----	----	2.50	3.25	3.60	5.00	8.00	17.00	30.00	60.00
" 192B. Galvanized	----	----	----	----	----	3.50	4.50	5.50	7.50	12.00	32.00	52.00	95.00



VERTICAL FOOT VALVE.
Single Gate, Copper Screen.
Sizes to 9 inch.



VERTICAL FOOT VALVE.
Gates Rubber Faced.
Sizes larger than 9 inch.

Vertical Foot Valves—Single Gate, with Copper Screen.

Size	2	2½	3	4	5	6	7	8
Screwed	11.50	12.00	16.25	20.00	26.25	33.00	38.50	44.75
Flanged	11.75	12.25	16.25	20.00	25.75	32.50	38.00	43.50
Hub End	----	----	----	----	----	33.25	39.00	46.50
Without Screen, deduct	----	----	----	4.50	5.25	6.25	7.00	8.00

Size	10	12	14	16	18	20	24	30
Screwed	82.00	113.00	----	----	----	----	----	----
Flanged	82.00	112.00	145.00	190.00	235.00	265.00	400.00	780.00
Hub End	83.00	113.00	147.00	193.00	238.00	268.00	405.00	790.00
Without Screen, deduct	7.00	10.00	12.50	15.00	21.00	24.50	31.00	50.00



Fig. 187A.
STRAINER.



MUSHROOM STRAINER.

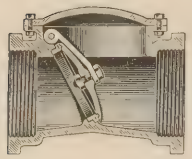
Fig. 187A. Iron Strainer.

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8
Fig. 187A. Plain	.22	.25	.33	.44	.55	.82	1.10	1.75	2.00	2.50	3.50	7.50
" 187A. Galvanized	.30	.34	.43	.58	.80	1.20	1.70	2.60	3.00	3.90	5.00	11.00

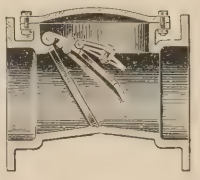
Mushroom Strainer.

Size	1	1¼	1½	2	2½	3	4	5	6	7	8	9	10
Plain	.85	1.10	1.25	1.60	2.05	2.75	5.00	10.00	11.00	17.30	18.20	25.20	26.50
Galvanized	1.00	1.35	1.50	2.00	2.50	3.40	6.10	12.50	13.60	22.25	23.30	30.00	32.00

Check Valves—Iron Body with Bronze Mountings.



HORIZONTAL SWING CHECK VALVE.
Screwed.



HORIZONTAL SWING CHECK VALVE.
Flanged.

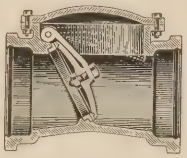
Swing Check Valves—Screwed.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed	7.00	7.75	9.75	14.50	20.50	23.00	25.50	31.00	41.50	44.50	62.50	77.50	97.00

Swing Check Valves—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Flanged	7.75	8.75	11.00	15.50	21.50	24.00	27.00	32.50	43.00	46.00	62.00	76.50	95.00

Size	14	16	18	20	24	30	36
Flanged	150.00	165.00	230.00	285.00	400.00	1200.00	1890.00



HORIZONTAL SWING CHECK.
Hub Ends.

Swing Check Valves—Hub Ends.

Size	3	3½	4	5	6	8	9	10
Hub End	10.25	14.25	20.50	25.00	28.50	43.00	61.00	73.00

Size	12	14	16	18	20	24	30	36
Hub End	92.00	146.00	160.00	225.00	280.00	390.00	1120.00	1825.00

14-inch and larger are with By-Pass Valves.

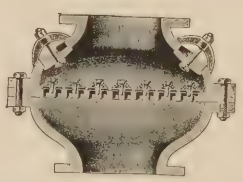
Vertical Check Valves, Iron Body with Bronze Mountings. Gates Rubber Faced.



SCREWED. SINGLE GATE.
Size, 9 inches and under.



FLANGED. SINGLE GATE.
Size, 9 inches and under.

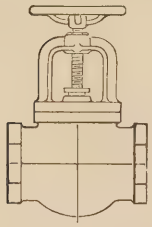


SCREWED, FLANGED OR HUB ENDS.
Sizes larger than 9 inches with multiple gates.

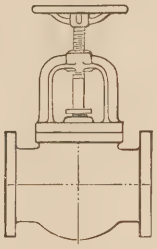
Vertical Check Valves—Gates Rubber Faced.

Size	2	2½	3	4	5	6	7	8	10	12	14	16	18	20	24
E. to E., Scd	7⅜	7⅜	8½	10⅜	12⅜	13½	----	14	17½	----	19	21	22	23½	29½
F. to F., Flgd	5 1/16	5¼	6	7⅞	9⅜	10½	----	10⅜	15½	16¾	21	23½	25	27½	32
Dia. Flgs	6	7	7½	9	10	11	----	13½	16	19	21	23½	25	27½	32
E. to E. Hubs	9½	9¾	11	12⅛	16⅜	17¾	----	19¾	22⅝	23¼	27¼	30	31	33½	40½
Screwed	7.50	8.00	12.70	16.50	22.50	29.00	32.50	37.00	92.50	123.00	----	----	----	----	----
Flanged	8.00	8.50	12.70	16.50	22 00	28.00	31.50	36.50	92.50	123.00	166.00	221.00	270.00	329.00	493.00
Hub End	8.00	8.50	12.70	16.50	22.00	30.00	35.00	39.00	94.50	125.00	168.00	224.00	273.00	332.00	498.00

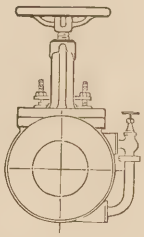
Extra Heavy Valves for 250 Pounds Working Pressure.



GLOBE VALVE SCREWED WITH YOKE.



GLOBE VALVE FLANGED WITH YOKE.

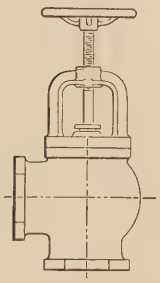


BY PASS GLOBE VALVE.

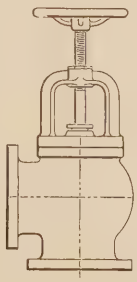
Extra Heavy Globe Valves.

Size	2½	3	3½	4	4½	5	6	7	8	9	10	12
Face to Face, Screwed Ends	10½	11½	12¾	13	14	14¾	16½	....	....	....	....	....
Face to Face, Flanged Ends	11½	12½	13½	14	15	15¾	17½	19¼	21	23	24½	28
Diameter of Flanges	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20
Diameter of Bolt Circle	5⅞	6⅝	7¼	7⅞	8½	9¼	10⅝	11⅞	13	14	15¼	17¾
No. of Bolts	4	8	8	8	8	8	12	12	12	12	16	16
Size of Bolts	¾	⅝	⅝	¾	¾	¾	¾	⅞	⅞	⅞	⅞	⅞
Size of By-Pass	....	....	....	....	....	1	1	1½	1½	1½	1½	1½
Globe, Screwed	29.00	32.00	33.50	35.00	55.00	55.00	79.00	100.00	111.00	....	190.00	285.00
" Flanged	31.00	35.00	37.00	39 00	59.00	59.00	84.00	105.00	117.00	....	200.00	300.00

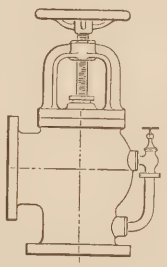
By-Pass Globe Valves quoted on application.



ANGLE VALVE SCREWED WITH YOKE.



ANGLE VALVE FLANGED WITH YOKE.



BY-PASS ANGLE VALVE.

Extra Heavy Angle Valves.

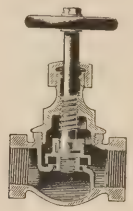
Size	2½	3	3½	4	4½	5	6	7	8	9	10	12
Center to Inlet, Screwed	5¼	5¾	6⅜	6½	7	7⅜	8¼	....	....	....	....	....
Center to Outlet, "	5¼	5¾	6⅜	6½	7	7⅜	8¼	....	....	....	....	....
Center to Inlet, Flanged	5¾	6¼	6¾	7	7½	7⅞	8¾	9⅝	10½	11½	12¼	14
Center to Outlet, "	5¾	6¼	6¾	7	7½	7⅞	8¾	9⅝	10½	11½	12¼	14
Diameter of Flanges	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20
Bolt Circle	5⅞	6⅝	7¼	7⅞	8½	9¼	10⅝	11⅞	13	14	15¼	17¾
Number of Bolts	4	8	8	8	8	8	12	12	12	12	16	16
Size of Bolts	¾	⅝	⅝	¾	¾	¾	¾	⅞	⅞	⅞	⅞	⅞
Size of By-Pass	....	....	....	....	....	1	1	1½	1½	1½	1½	1½
Angle, Screwed	29.00	32.00	33.50	35.00	55.00	55.00	79.00	100.00	111.00	....	190.00	285.00
" Flanged	31.00	35.00	37.00	39.00	59.00	59.00	84.00	105.00	117.00	....	200.00	300.00

By-Pass Angle Valves quoted on application.

Jenkins Bros. Brass Valves.



BRASS GLOBE VALVE, SCREWED.



SECTION.



BRASS ANGLE VALVE, SCREWED.

Brass Globe and Angle Valves—Screwed.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle, each	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00



BRASS GLOBE VALVE, FLANGED.



BRASS ANGLE VALVE, FLANGED.

Brass Globe and Angle Valves—Flanged.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle, each	3.50	4.00	4.00	5.00	6.00	9.00	11.00	16.50	25.00	34.00



BRASS CROSS VALVE, SCREWED.



BRASS CROSS VALVE, FLANGED.

Brass Cross Valves—Screwed and Flanged.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed, each	1.70	2.00	2.25	2.50	3.25	4.75	6.25	9.50	20.00	27.50
Flanged, "	----	----	----	----	8.64	11.45	15.10	22.70	32.82	44.30



BRASS HORIZONTAL CHECK VALVE.



BRASS ANGLE CHECK VALVE.



BRASS VERTICAL CHECK VALVE.

Brass Horizontal Angle and Vertical Check Valves.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed, each	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50	13.50	20.50
Flanged, "	----	----	----	4.75	5.50	7.80	9.80	15.00	22.80	32.40

Jenkins Bros. Iron Body Composition Mounted Valves.



GLOBE VALVE.
Screwed.



ANGLE VALVE.
Screwed.

Iron Body, Composition Mounted, Globe and Angle Valves, Brass Hub.

Size	¾	1	1¼	1½	2	2½	3
Screwed, each	2.75	2.85	3.85	5.00	7.25	11.00	16.00
Flanged, "	----	----	----	----	8.50	13.00	18.00



GLOBE VALVE.
Screwed, with Yoke.



GLOBE VALVE.
Flanged, with Yoke.



ANGLE VALVE.
Screwed, with Yoke.



ANGLE VALVE.
Flanged, with Yoke.

Iron Body Globe and Angle Valves, Screwed and Flanged, with Yoke.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	16	18	20	24
Globe and Angle, Screwed	10.00	12.00	16.75	19.50	24	32	40	48	80	90	121	130	185	---	---	---	---	---
" " " Flanged	11.75	14.00	18.50	21.50	26	34	42	50	80	90	121	130	185	334	400	540	620	1260



CROSS VALVE.
Screwed, with Yoke.

Iron Body Cross Valve, with Yoke.

Size	2½	3	3½	4	4½	5	6
Cross Valve, Screwed	16.00	21.00	26.00	30.00	42.00	45.00	58.00
" " Flanged	19.00	24.00	29.00	33.00	45.00	48.00	62.00



HORIZONTAL CHECK VALVE.
Screwed.



HORIZONTAL CHECK VALVE.
Flanged.

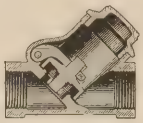


ANGLE CHECK VALVE.
Flanged.

Iron Body Check Valves.

Size	2½	3	3½	4	5	6
Horizontal, Angle and Vertical, Screwed, each	10.50	14.00	17.00	20.00	30.00	40.00
" " " " Flanged, "	12.50	16.50	20.00	23.00	33.00	43.00

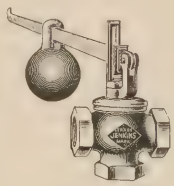
Jenkins Bros. Valves.



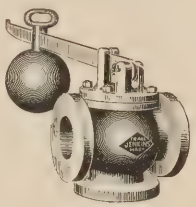
Self Adjusting Swing Check Valve.

Can be repaired by simply removing the Cap and renewing the Disc.

Size	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
Brass, Screwed	1.20	1.30	1.90	2.60	3.60	5.00	7.50	13.50	20.50	----	----	----	----	----	----
" Flanged	---	----	----	5.50	7.80	9.80	15.00	22.80	32.40	----	----	----	----	----	----
Iron Body, Screwed	----	----	----	----	----	----	----	12.00	15.50	18.50	22.75	32.90	43.75	92.00	146.00
" Flanged	----	----	----	----	----	----	----	13.90	17.75	20.60	25.45	36.10	47.10	92.00	146.00



BRASS SAFETY VALVE.
Screwed.



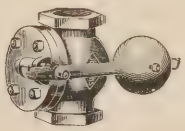
IRON BODY SAFETY VALVE.
Flanged.

Brass and Iron Body Safety Valves.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Brass, Screwed	4.12	4.95	5.50	8.25	10.15	15.40	----	----	----	----	----	----	----
Iron Body, Screwed	----	4.25	4.50	6.25	7.25	10.25	16.75	22.00	31.00	38.00	46.50	55.00	73.00
" Flanged	----	----	----	----	----	12.25	19.00	25.50	34.00	41.50	51.75	62.00	80.00

These Valves contain the Jenkins Discs, which will not corrode, nor stick to the seat; consequently, the Valves are always ready to operate, even if they have been idle for years. Cross Pattern furnished unless otherwise specified.

Iron Body Back Pressure Valves—Composition Mounted.



BACK PRESSURE VALVE.
Screwed.

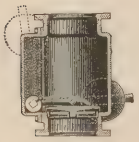
Fitted with Jenkins Discs.

Absolutely Noiseless.



BACK PRESSURE VALVE.
Flanged.

Size	2	2½	3	3½	4	4½	5	6	8
Screwed	7.68	8.88	11.05	13.45	15.85	18.00	23.75	32.15	58.00
Flanged	8.88	10.10	12.25	15.35	18.15	22.00	26.15	34.80	58.00



EXCELSIOR STRAIGHT-WAY BACK PRESSURE VALVE.

Excelsior Straight-way Back Pressure Valve.

This Valve is noiseless, and free from any complicated attachments.

The area of the "Excelsior" Valve is equal to that of pipe. This Valve has no dash pots, springs, guides or complicated levers to get out of order. Is simple, reliable and well made. Never sticks, and can be relied upon at all times when using exhaust steam for heating; or when used as a relief, or free exhaust on a condensing plant, it has no equal. It can be placed in any position, vertical, horizontal or at any angle desired.

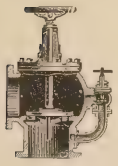
The Valve can be removed entirely from exhaust passage without taking the Valve apart. Construction insures almost unlimited longevity. Can be thrown in and out of use instantly.

Excelsior Back Pressure Valves.

Size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	16	18	20
Screwed	15.00	18.00	21.00	24.00	30.00	33.00	43.00	57	--	--	---	---	---	- -	---	---
Flanged	16.00	19.00	23.00	25.00	31.00	34.50	44.50	57	71	88	102	143	255	310	380	450

For sizes above 20 inches we furnish net prices.

Jenkins Bros. Valves.



FLANGED ANGLE BY-PASS VALVE.

Globe and Angle Valves with By-Pass.

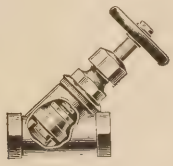
Globe and Angle Valves furnished with By-Pass when desired.

All sizes up to and including 10-inch have elbows screwed into body and connected to By-Pass Valves with union nuts Other sizes have flanges all around.

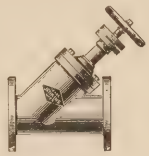
Dimensions of Valves furnished on application.

These Valves are not carried in stock.

Size	4	4½	5	6	7	8	9	10	12	14	16	18	20	24
Size of By-Pass Valve	1	1	1¼	1¼	1½	1½	1½	1½	2	2	3	3	4	4
Globe or Angle Valve with By-Pass	$38	47	60	66	100	110	144	154	224	380	452	620	720	1400



BRASS Y OR BLOW-OFF VALVE, SCREWED.



IRON Y OR BLOW-OFF VALVE, FLANGED.

Y or Blow-Off Valves.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8
Brass, Screwed	2.00	3.00	4.00	5.00	6.50	9.25	18.00	25.00	----	----	----	----	----
" Flanged	----	----	8.64	10.78	12.96	19.41	28.05	36.68	----	----	----	----	----
Iron Body, Screwed	----	----	----	----	----	10.40	14.80	20.00	28.00	35.00	58.80	70.00	115.00
" Flanged	----	----	----	----	----	12.40	17.40	23.00	31.00	38.40	64.00	70.00	115.00
Iron Body Y Valves, Flanged — Dia. of Flanges,						6	7	7½	8½	9	10	11	13½
Iron Body Y Valves, Flanged — Face to Face Flanges,						8½	11	12⅛	15	14	16½	18¾	23½



JENKINS DISC.

Jenkins Discs.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½
Price	.03	.04	.04	.05	.06	.09	.12	.18	.24	.33	.45	.52	.60
Size	5	6	7	8	9	10	12	14	16	18	20	24	
Price	.68	.90	.98	1.20	1.60	1.75	2.25	3.00	4.00	5.00	6.00	9.00	

Jenkins Wood Wheel Gate Valves—Screwed Ends.

Right or Left Hand Threads, as ordered.



WOOD WHEEL GATE VALVE.

Size							1½	¾	1	1¼	1½	2
No. 1.	Wood Wheel,	Finished	Trimmings				2.25	2.75	3.65	4.95	6.00	9.25
" 2.	"	"	all over				3.75	4.25	5.25	6.55	7.60	12.90
" 3.	"	Nickel Plated	Trimmings				2.50	3.00	3.95	5.15	6.25	9.45
" 4.	"	Rough Body,	Nickel Plated	all over			2.55	3.05	4.00	5.20	6.35	9.60
" 5.	"	Finished and	"	"	"		4.00	4.55	5.65	6.85	8.00	13.55

With Male or Female Unions, as ordered.

Size							1½	¾	1	1¼	1½	2
No. 6.	Wood Wheel,	Finished	Trimmings				3.20	3.75	4.80	6.40	8.00	11.50
" 7.	"	"	all over				4.75	5.30	6.40	8.00	9.45	15.15
" 8.	"	Nickel Plated	Trimmings				3.30	3.95	5.10	6.60	8.10	11.70
" 9.	"	Rough Body,	Nickel Plated	all over			3.40	4.05	5.30	6.75	8.25	11.90
" 10.	"	Finished and	"	"	"		5.05	5.65	6.95	8.40	10.50	15.85

Also furnished with Lock Shields.

Dimensions of Jenkins Bros. Valves.

Iron Body Valves.

	Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	16	18	20	24
A	Screwed	6½	8	9⅜	10	11⅞	13	13½	16	16½	18⅝	20¼	21½	25¾	30½	34	38	42	50
	Flanged	7⅛	7½	9¼	10	11¾	12½	13⅛	16	16¼	18½	20	21¼	24½	30	34	38	42	50
B	Screwed	3½	3⅞	4 11/16	5	5 15/16	6 3/16	6⅝	8	8¼	9⅜	10	10¾	12⅞	15¼	17	19	21	25
	Flanged	3⅞	4½	4⅝	5⅜	5⅞	6¼	6½	8	8	9¼	10	10⅝	12¼	15	17	19	21	25
C		6	7	7½	8½	9	9¼	10	11	12½	13⅞	15	16	19	21	23½	25	27½	32
D		¾	13/16	⅞	15/16	1	1 1/16	1⅛	1 3/16	1¼	1 5/16	1⅜	1 7/16	1 9/16	1 11/16	1 13/16	1⅞	2	2¼
E		9⅛	11	12⅛	13⅛	14¾	15¼	17	19	20¾	22	22⅜	24⅜	28¾	32½	39¾	37½	42¾	47½
F		10¼	11¾	13⅜	14⅛	15	15⅜	18	19¼	22	23⅜	24	25¾	31	38½	42	40½	45½	51¼

Brass Valves.

	Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
A	Screwed	2¾	3 5/16	3 15/16	4¼	4 13/16	5¾	6⅝	8½	10	11⅞	13	13¼	16
	Flanged	3 1/16	3 9/16	4	4⅜	4⅞	5 15/16	6 11/16	7½	10	11¾	12½	13	16
B	Screwed	1⅜	1½	1 13/16	2 1/16	2¼	2 13/16	3 5/16	4¼	5	5 15/16	6 3/16	6⅝	8
	Flanged	2 1/16	2⅜	2⅝	2 15/16	3 3/16	3¾	4¼	4 9/16	5⅜	5⅞	6¼	6½	8
C		3	3½	4	4½	5	6	7	7½	8½	9	9¼	10	11
D		3/8	13/32	7/16	15/32	½	17/32	9/16	⅝	15/16	1	1 1/16	1⅛	1 3/16
E		4⅞	5 1/16	5¾	7	7 3/16	8 7/16	9⅝	10 1/8	13 1/8	14¾	15¼	17	19
F		4 15/16	5 9/16	6	7¼	7 13/16	9⅜	10¾	11¼	14 1/8	15	15⅜	18	19¼

A—Face to Face, Globe and Check.

B—Center to Face, Angle and Check.

C—Diameter of Flanges.

D—Thickness of Flanges.

E—Height when open, Globe.

F—Height when open, Angle, center of pipe to top of handwheel.

Jenkins Bros. Special Valves.

(Not Illustrated.)

We list below a special line of Extra Heavy Brass Globe and Angle Valves. They are designed for 300 pounds steam pressure and tested to 800 pounds hydraulic pressure. These valves are especially suited for hydraulic work and can be safely used on such pressures up to 1,000 pounds. All parts interchangeable Can be packed when wide open.

High Pressure Globe and Angle Valves—Brass.

Size	½	¾	1	1¼	1½	2	2½	3
Screwed	3.00	4.00	6.00	8.25	11.00	16.00	33.00	45.00
Flanged	5.00	6.70	8.90	11.50	15.00	21.75	40.00	52.00

All Iron Globe and Angle Valves for Ammonia, Acids, Etc.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
Screwed	3.25	3.50	3.75	4.00	4.25	5.25	11.00	13.25	15.50	17.50	25.75	27.00	33.25	43.25	52.00
Flanged	4.10	4.25	4.50	4.75	5.25	6.50	12.50	14.50	16.75	19.25	27.50	29.00	35.50	46.25	56.25

All Iron Gate Valves for Ammonia, Acids, Etc.

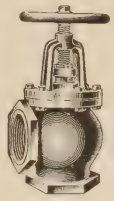
Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Screwed	3.25	3.25	3.75	4.50	5.25	8.25	10.00	12.25	15.00	18.25
Flanged	----	----	----	----	----	10.25	11.50	13.75	16.50	20.50

Renewable Vulcanized Asbestos Disc.

Brass Valves—Standard and Extra Heavy.



GLOBE VALVE.
Screwed.



ANGLE VALVE.
Screwed.



CROSS VALVE.
Screwed.

Standard Valves—Screwed Ends and Top.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Globe and Angle, each	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00	43.25	51.00
Cross Valves, "	----	----	----	2.25	2.50	3.25	4.75	6.25	9.50	20.00	30.00	----	----

Extra Heavy Valves—Screwed Ends and Top.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	4.25	6.00	8.00	10.00	13.75	22.00	31.00	42.00

Standard Yoke Top Valves—Screwed Ends.

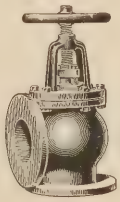
Size	2	2 1/2	3	3 1/2	4	5	6
Each	18.00	31.00	40.00	48.00	61.00	90.00	107.00

Extra Heavy Yoke Top Valves—Screwed Ends.

Size	2	2 1/2	3	3 1/2	4	5	6	7	8
Each	37.00	47.00	57.00	69.00	80.00	125.00	153.00	214.00	275.00



GLOBE VALVE.
Flanged.



ANGLE VALVE.
Flanged.



CROSS VALVE.
Flanged.

Standard Valves—Flanged—Screwed Top.

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Globe and Angle, each	6.00	9.00	11.00	16.50	25.00	34.00	58.00	66.00
Cross Valves, "	8.75	11.50	15.25	23.00	32.00	47.00	----	----

Extra Heavy Valves—Flanged—Screwed Top.

Size	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle, each	10.00	12.50	16.00	32.00	42.00	54.00

Standard Yoke Top Valves—Flanged.

Size	2	2 1/2	3	3 1/2	4	5	6
Globe and Angle, each	22.00	35.00	49.00	63.00	75.00	100.00	120.00

Extra Heavy Yoke Top Valves—Flanged.

Size	2	2 1/2	3	3 1/2	4	5	6	7	8
Globe and Angle, each	48.00	60.00	70.00	83.00	94.00	140.00	180.00	238.00	295.00

Discs for Brass Globe and Angle Valves.
Asbestos Ring Brass Holder.



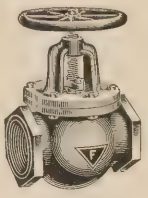
RING HOLDER.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each	.13	.14	.07	.09	.10	.12	.18	.25	.36	.48	.60	1.50	2.00

Renewable Vulcanized Asbestos Disc Iron Body Valves—Standard, Heavy and Extra Heavy.



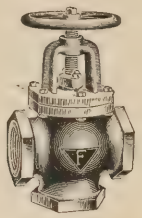
GLOBE VALVE, SCREWED.



YOKE GLOBE, SCREWED.



ANGLE VALVE, SCREWED.



YOKE CROSS, SCREWED.

Standard Valves—Screwed Ends and Top.

Size	1½	2	2½	3	3½	4
Globe and Angle, each	5.00	7.25	11.00	16.00	18.50	23.00
Cross Valves, each	12.00	14.00	16.00	21.00	25.00	27.00

Standard Valves—Screwed Ends with Yoke.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe and Angle, each	10.00	12.00	16.75	19.50	24.00	32.00	40.00	48.00	80.00	90.00	130	185
Cross Valve, each	14.00	16.00	21.00	26.00	30.00	42.00	45.00	58.00	----	----	----	----

Heavy Pattern Yoke Top Valves—Screwed Ends.

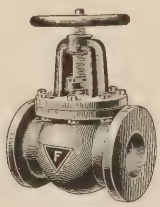
Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Each	12.00	14.50	20.10	23.40	28.80	38.40	48.00	57.60	96.00	108	156	222

Extra Heavy Yoke Top Valves—Screwed Ends.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Each	12.50	15.00	21.00	24.50	30.00	40.00	50.00	60.00	100	113	163	232



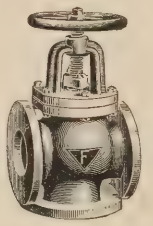
GLOBE VALVE, FLANGED.



EXTRA HEAVY GLOBE VALVE, FLANGED.



ANGLE VALVE, FLANGED.



CROSS VALVE, FLANGED.

Standard Valves—Flanged, Screwed Top.

Size	1½	2	2½	3	3½	4
Globe and Angle, each	6.00	8.50	13.00	18.00	20.50	25.00
Cross Valves, each	15.00	17.00	19.00	24.00	27.00	30.00

Standard Yoke Top Valves—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14
Globe and Angle, each	11.75	14.00	18.50	21.50	26.00	34.00	42.00	50.00	80.00	90.00	130	185	334
Cross Valves, each	17.00	19.00	24.00	29.00	33.00	45.00	48.00	62.00	----	----	----	----	---

Heavy Pattern Yoke Top Valves—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	16
Globe and Angle, each	14.10	16.80	22.20	25.80	31.20	40.80	50.40	60.00	96.00	108	156	222	450

Extra Heavy Yoke Top Valves—Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe and Angle, each	14.70	17.50	23.25	27.00	32.50	42.50	52.50	62.50	100	113	163	232



RING HOLDER.

Discs for Iron Body Globe and Angle Valves.

Improved Vulcanized Asbestos Ring Iron Holder.

Size	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
Each	.25	.36	.48	.60	.75	.90	1.10	1.25	1.60	2.40	2.90	4.75	4.75	5.50	7.75

Brass Straightway Swinging Check Valves.



Fig. 60.
HORIZONTAL AND VERTICAL.



Fig. 57.
ANGLE.

Brass Check Valves, Straightway Swinging, Screwed Cap, Rotating Brass Disc.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 60. Screwed Ends, Horizontal and Vertical	1.25	1.30	1.50	1.75	2.25	3.25	4.25	6.25	12.00	20.00
" 57. " " Angle	----	----	1.50	1.75	2.25	3.25	4.25	6.25	12.00	20.00
" 339. With Asbestos or Leather Disc	----	----	1.50	1.75	2.25	3.25	4.25	6.25	12.00	20.00
" 45. Discs for Figs. 57, 60 and 179	.10	.12	.14	.16	.18	.20	.25	.40	.60	.75

Heavy Pattern, Horizontal and Vertical—Screwed.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½
Fig. 180, Heavy, Screwed	2.50	2.50	2.60	3.00	4.00	5.75	7.50	11.00	22.00

Extra Heavy Pattern, Horizontal and Vertical—Screwed.

Size	½	¾	1	1¼	1½	2
Fig. 181. Extra Heavy, Screwed	5.00	5.85	7.50	10.85	14.20	20.75

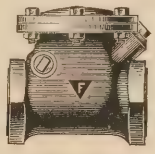


Fig. 182.
HORIZONTAL AND VERTICAL.



Fig. 340.
ANGLE.

Extra Heavy, Bolted Cap—Screw Ends.

Size	2	2½	3	3½	4
Fig. 182. Screwed, Horizontal and Vertical, Extra Heavy	17.00	27.00	34.50	50.50	55.00
" 340. Angle Screwed, Extra Heavy	----	27.00	34.50	50.50	55.00



Fig. 179.
HORIZONTAL AND VERTICAL.

Screw Cap—Flanged Ends.

Size	1	1¼	1½	2	2½	3
Fig. 179. Horizontal and Vertical, Flanged	6.25	7.85	10.25	15.50	25.00	32.50

Extra Heavy Bolted Cap—Flanged.

Size	2	2½	3	3½	4
Fig. 183. Horizontal or Vertical, Extra Heavy	22.00	34.50	42.00	58.00	69.00
" 341. Angle, Extra Heavy	----	34.50	42.00	58.00	69.00

Iron Body Straightway Swinging Check Valves.

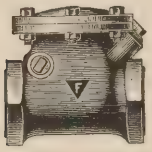


Fig. 90.
HORIZONTAL CHECK VALVE.
Screwed.



Fig. 93.
ANGLE CHECK VALVE.
Screwed.

Iron Body Check Valves, Straightway Swinging—Screwed.

With Bolted Cap and Rotating Disc.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Fig. 90	6.25	10.00	12.00	16.00	18.00	21.50	25.00	32.00	41.00	50.00	104.00	152.00
" 93	----	10.00	12.00	16.00	18.00	----	25.00	32.00	41.00	50.00	----	----

Extra Heavy—Screwed.

Size	2½	3	3½	4	5	6	7	8	10
Fig. 191	16.00	19.00	26.50	29.00	43.00	56.00	70.00	85.00	132.00



Fig. 91.
HORIZONTAL CHECK VALVE.
Flanged.

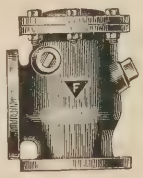


Fig. 94.
ANGLE CHECK VALVE.
Flanged.

Iron Body Check Valves, Straightway Swinging—Flanged.

With Bolted Cap and Rotating Disc.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16
Fig. 91	6.25	10.00	12.00	16.00	18.00	21.50	25.00	32.00	41.00	50.00	104.00	152.00	289.00	334.00
" 94	----	10.00	12.00	16.00	18.00	----	25.00	32.00	41.00	50.00	----	----	----	----

Extra Heavy—Flanged.

Size	2½	3	3½	4	5	6	7	8	10
Fig. 192. Extra Heavy Flanged	19.50	22.50	30.00	32.50	46.00	59.00	73.00	93.00	140.00

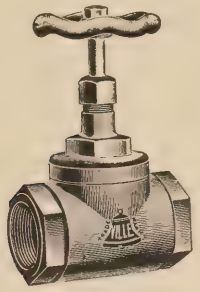
Bell End Straightway Swinging Check Valves.

Size	2	3	4	5	6	7	8	10	12	14	16
Fig. 92. Bell End	6.25	12.00	18.00	25.00	32.00	41.00	50.00	104.00	152.00	289.00	334.00

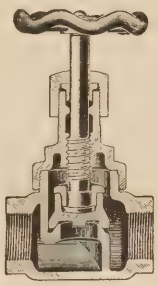
Discs for Iron Body Check Valves.

Size	2	2½	3	3½	4	5	6	7	8	10	12
Ground Brass	.45	.50	.60	.75	1.15	1.35	2.00	3.00	5.50	8.00	16.50
Asbestos	.90	1.30	1.50	2.40	2.65	3.10	3.75	4.50	6.00	9.00	12.50
Leather	.90	1.30	1.50	2.40	2.65	3.10	3.75	4.50	6.00	9.00	12.50

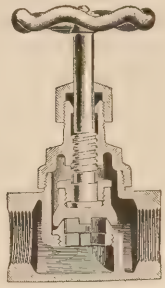
Eastwood Valves.



BRASS GLOBE VALVE, SCREWED BONNET.



SECTION.



BRONZE GLOBE VALVE, RENEWABLE SEAT.

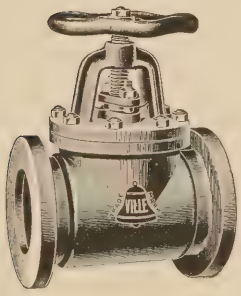
Eastwood Brass Valves.

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Brass Hor. and Angle Valves, Screwed	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
" " " " Flanged	....	....	....	....	....	6.00	9.00	11.00	16.50	25.00	34.00
" Cross Valves, Screwed	....	1.70	2.00	2.25	2.50	3.25	4.75	6.25	9.50	20.00	27.50
" " " Flanged	....	....	....	....	....	8.64	11.45	15.10	22.70	32.82	44.30
" Hose End Hor. and Angle Valves	....	....	....	....	....	3.90	4.70	6.50	9.15	17.10	23.35

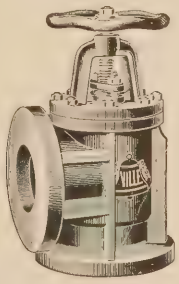
Eastwood Bronze Valves—Renewable Seat.

Size	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Bronze Hor. or Angle Valves, Screwed	2.35	3.00	4.25	5.80	8.40	16.25	22.75
" " " " Flanged	....	6.20	9.25	11.30	16.90	25.50	34.75
" Cross Valves, Screwed	2.65	3.45	5.00	6.55	9.90	20.50	28.25
" " " Flanged	....	8.84	11.70	15.40	23.10	33.32	45.05
" Hose End Hor. or Angle Valves	....	4.10	4.95	6.80	9.55	17.60	24.10

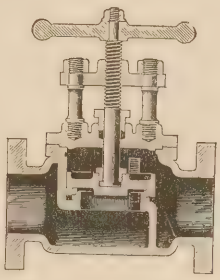
Eastwood Iron Body Valves.



No. 1.
YOKE, PLAIN BODY.



No. 1.
YOKE, RIBBED BODY.



No. 2.
YOKE, SECTION.

Eastwood Iron Body Valves.

Size	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	10	12
Hor. and Angle, Plain Body, with Yoke, Scw.	10.00	12.00	16.75	19.50	24.00	32.00	40.00	48.00	80.00	90.00	130	185
" " " " " Flgd.	11.75	14.00	18.50	21.50	26.00	34.00	42.00	50.00	80.00	90.00	130	185
Cross Valves, Screwed	....	16.00	21.00	26.00	30.00	42.00	45.00	58.00	....	....	-	-
" " Flanged	....	19.00	24.00	29.00	33.00	45.00	48.00	62.00	-	....	....	-

Add 20% to list prices for Ribbed Bodies.

Lunkenheimer Regrinding Bronze Valves.



Fig. 407.
SCREWED.



Fig. 419.
SCREWED.
With Yoke.



Fig. 580.
FLANGED.

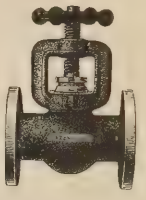


Fig. 709.
FLANGED.
With Yoke.

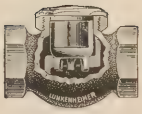


Fig. 414.
HORIZONTAL.
Screwed Check.



Fig. 583.
HORIZONTAL.
Flanged Check.

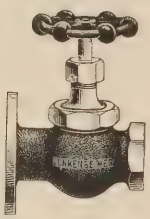


Fig. 684.
SPECIAL.
Screwed and Flanged.

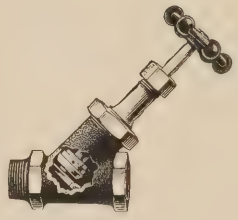


Fig. 543.
STRAIGHTWAY.
Blow-off.

The illustrations above show a few of the several patterns of the Lunkenheimer Regrinding Bronze Valves. These patterns are guaranteed for a working steam pressure of 175 pounds per square inch.

These Valves are the standards of design adopted by the United States Navy. Every detail of their design is carefully perfected for severe requirements. They are extensively used in the Merchant Marine, on locomotives and high class power plants, and wherever a good Valve is a necessity.

No soft discs are used, and slight abrasions of the seat or disc may be removed by the regrinding feature.

A complete line of extra heavy patterns for 350 pounds working steam pressure is also manufactured, and we solicit specifications in this line, prices being special.

Regrinding Bronze Valves.

Size		⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Outside Diameter of Flange		----	----	2½	3	3½	4	4½	5	6	7	7½
Fig. 407.	Globe or Angle Valve	.70	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
	Cross Valve, Screwed	1.00	1.00	1.00	1.50	2.00	2.70	3.50	5.10	8.00	16.00	24.00
Fig. 419.	Globe or Angle Valve	----	----	----	1.60	2.20	3.20	4.20	5.50	7.90	13.00	20.00
	Cross Valve, Screwed	----	----	----	2.20	2.70	4.10	5.20	6.70	9.40	15.60	23.80
Fig. 580.	Globe or Angle Valve	----	----	2.60	3.20	4.00	5.50	7.90	10.60	14.50	21.90	32.50
	Cross Valve, Flanged	----	----	3.20	4.00	5.30	7.00	9.80	13.40	18.70	27.70	41.00
Fig. 709.	Globe or Angle Valve	----	----	----	4.00	5.50	6.70	9.20	11.90	15.90	22.40	31.00
	Cross Valve, Flanged	----	----	----	5.70	7.70	9.30	12.70	16.40	21.60	29.70	40.30
Fig. 414.	Horiz., Angle or Vert	.50	.50	.60	.85	1.15	1.55	2.30	3.25	5.20	10.00	14.00
" 583.	" "	----	----	2.30	2.90	3.60	5.00	7.30	9.80	13.50	20.40	29.80
" 684.	Globe or Angle Valve	----	----	2.10	2.60	3.30	4.70	6.60	9.10	12.80	20.00	30.50
" 543.	M. and F., or both female	----	----	----	----	2.75	3.25	4.00	5.75	9.00	18.50	----

Lunkenheimer "Victor" Wedge Gate Valves.


Fig. 602.


Fig. 603.


Fig. 605.


Fig. 637.


Fig. 642.


Fig. 645.

These are a few of the types of "Victor" Gate Valves, designed for high grade power plant requirements. Special circular of complete line with dimensions, etc., upon application. Submit specification of requirements for special prices.

"Victor" Wedge Gate Valves.

Size	2	2½	3	3½	4	4½	5	6
Outside Diameter of Flange	6	7	7½	8½	9	9¼	10	11
Fig. 602. Screwed	9.00	11.00	14.00	22.00	29.00	34.00	42.00	53.00
" 603. Flanged	9.00	11.00	14.00	22.00	29.00	34.00	42.00	53.00
" 636. Screwed	----	----	----	----	----	----	46.50	58.50
" 637. Flanged	----	----	----	----	----	----	46.50	58.50
" 605. Screwed	10.00	12.00	15.50	24.00	32.00	37.50	46.50	58.50
" 608. Flanged	10.00	12.00	15.50	24.00	32.00	37.50	46.50	58.50
" 642. Screwed	12.00	15.00	19.00	30.00	38.00	45.00	53.00	66.00
" 643. Flanged	12.00	15.00	19.00	30.00	38.00	45.00	53.00	66.00
" 644. Screwed	----	----	----	----	----	----	58.00	72.00
" 645. Flanged	----	----	----	----	----	----	58.00	72.00

Size	7	8	9	10	12	14	15	16
Outside Diameter of Flange	12½	13½	15	16	19	21	22¼	23½
Fig. 602. Screwed	60.00	75.00	90.00	115.00	170.00	----	----	----
" 603. Flanged	60.00	75.00	90 00	115.00	170.00	235.00	300.00	370.00
" 636. Screwed	66.00	82.50	98.50	126.50	187.00	----	----	----
" 637. Flanged	66.00	82.50	98.50	126.50	187.00	255.00	325.00	395.00
" 605. Screwed	66.00	82.50	98.50	125 00	180.00	----	----	----
" 608. Flanged	66.00	82.50	98.50	125.00	180.00	245.00	315.00	390 00
" 642. Screwed	75.00	94.00	112.00	142.00	210.00	----	----	----
" 643. Flanged	75.00	94.00	112.00	142.00	210.00	290.00	380.00	430.00
" 644. Screwed	81.00	100.00	120.00	154.00	227.00	----	----	----
" 645. Flanged	81.00	100.00	120.00	154.00	227.00	310.00	405.00	450.00

Lunkenheimer Bronze Flanged Yoke Valves.


Fig. 693.
SCREWED GLOBE VALVE.


Fig. 698.
FLANGED CROSS VALVE.


Fig. 697.
FLANGED ANGLE VALVE.

These valves are designed for the requirements of the modern merchant marine, and represent a complete line of bronze valves in the following sizes.

The following lists cover patterns for 200 pounds working steam pressure, and upon receipt of specifications prices will be issued to cover extra heavy types for 350 pounds working steam pressure.

Bronze Flanged Yoke Valves.

Size	2	2½	3	3½	4	4½	5	6	7	8
Outside Diameter of Flange	6	7	7½	8½	9	9¼	10	11	12½	13½
Thickness of Flange	7/16	15/32	1/2	17/32	9/16	9/16	5/8	11/16	3/4	13/16
Fig. 693. Globe or Angle, Screwed	10.70	17.50	25.90	36.50	47.10	58.50	74.80	100.00	148.30	203.80
Cross Valve, Screwed	12.90	21.00	30.80	43.50	55.60	69.10	87.60	116.40	171.50	236.50
Fig. 697. Globe or Angle, Flanged	18.80	26.90	36.90	49.70	61.10	73.90	91.40	116.90	168.60	232.50
" 698. Cross Valve, Flanged	22.60	32.20	43.90	59.10	72.10	87.20	106.90	136.80	195.60	268.70

Lunkenheimer "Handy" and "Lever Throttle" Valves.



Fig. 430.
"HANDY."

These two types of Quick Opening Gate Valves, owing to their simple, compact and practical design, are extensively used in oil refineries, breweries, tanneries, pulp and chemical fiber mills, soap, varnish and white lead works, creameries, canning and packing establishments, low pressure steam systems, hot water heating and fire extinguishing apparatus, laundry and wool washing machinery, railroad water stations, etc. They are furnished in all brass, iron body brass mounted, or all iron.

The "Handy" is guaranteed for pressures not exceeding 75 pounds, and the "Lever Throttle" for working pressures up to 175 pounds per square inch.



Fig. 431.
"LEVER THROTTLE."

"Handy" and "Lever Throttle" Valves.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	8
Fig. 430. Brass	1.60	1.80	2.50	3.50	5.00	7.50	13.50	19.00	40.00	60.00	----	----	----	----
" " I. B., B. M.	----	----	----	----	----	7.00	12.00	15.00	18.00	21.00	25.00	30.00	35.00	65.00
" " All Iron	----	3.40	4.00	4.50	6.00	7.00	12.00	15.00	18.00	21.00	25.00	30.00	35.00	65.00
" 431. Brass	----	3.00	4.00	5.00	7.00	10.00	19.00	----	----	----	----	----	----	----
" " I. B., B. M.	----	----	----	----	----	----	16.00	20.00	25.00	30.00	----	35.00	40.00	----

"Clip" Iron Body, Bronze Mounted Gate Valves.



Fig. 600.
SCREWED.
2 inches and below.



Fig. 600.
SCREWED.
2½ inches and above.



Fig. 638.
FLANGED.
2 inch size.



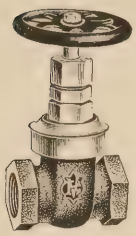
Fig. 638.
FLANGED.
2½ inches and above.

This Valve is particularly designed for rough usage against working pressures not exceeding 100 pounds. The body and hub are of finest grade cast iron, and all wearing parts, seats, disc, stem and stuffing-box are of bronze. The body is heavier than an extra heavy cast iron fitting, and each Valve is tested before shipping. The seats and disc are of the wedge design, and the stuffing-box may be repacked when Valve is open under pressure.

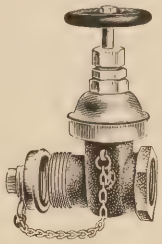
"Clip" Gate Valves.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Screwed	1.50	1.90	2.50	3.50	5.00	7.50	12.00	15.00	18.00	20.00	23.00	25.00	30.00
Flanged	----	----	----	----	----	----	8.50	13.50	16.90	20.30	22.50	26.00	28.30	33.80

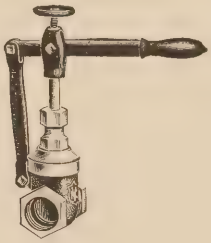
Kennedy Composition Standard Wedge Gate Valves.



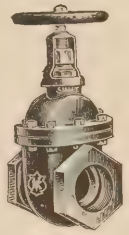
COMPOSITION WEDGE GATE VALVE, SCREWED.



COMPOSITION HOSE END GATE VALVE.



COMPOSITION SLIDING STEM AND LEVER GATE VALVE.



COMPOSITION INDICATOR VALVE, SCREWED.

Composition Standard Wedge Gate Valves—Screwed and Flanged.

These Valves are double faced, parallel and closely fitted; either end can be used for inlet or outlet. All parts are interchangeable. All work is thoroughly tested and inspected before leaving works.

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Face to Face, Screw Ends	2	2 1/8	2 1/2	3	3 1/4	3 1/2	4	4 1/2	4 7/8	5 3/4	6	7	--
" " Flange "	--	---	3	3	3 1/2	4	4 3/4	5 1/2	6	6 1/4	7	8	9
Diameter of Flanges	--	--	3	3	4	4 1/2	5	6	6 1/2	7	7 1/2	9	10	11
Screw Ends	1.40	1.40	1.80	2.50	3.50	5.00	7.50	14.00	20.00	32.00	40.00	55.00	78.00
Flange Ends	2.50	2.75	3.50	4.50	5.50	7.50	12.00	18.00	25.00	40.00	48.00	66.00	94.00

Larger sizes to order. Prices on application.

Composition Hose End Gate Valves with or without Cap and Chain.

When other than New York Standard Thread is required send gauge or coupling.

Size	1	1 1/4	1 1/2	2	2 1/2	3
Without Cap and Chain	2.50	3.50	5.00	7.50	14.00	20.00
Finished all over, with Finished Brass Wheel	5.00	6.75	9.00	13.00	22.00	29.00
Finished and Nickel Plated all over	5.75	7.50	9.75	13.75	23.00	30.00
Finished Brass Cap and Chain extra	1.25	1.35	1.50	1.75	2.50	3.50

Composition Sliding Stem and Lever Gate Valves.

The Sliding Stem and Lever Valves are designed for moderate pressure, where a quick motion is desirable. They are opened and shut by a single movement of the lever, and the gates are held in any desired position by the wheel screw.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Screw Ends	2.50	3.00	4.00	5.00	7.00	10.00	19.00	25.00	38.00	47.00
Flange Ends	4.00	4.75	6.00	7.00	9.50	14.50	23.00	30.00	46 00	55.00

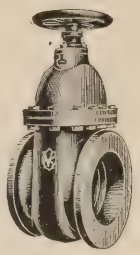
Composition Indicator Valves—Screwed and Flanged.

Size	1 1/2	2	2 1/2	3	3 1/2	4
Screw Ends	9.25	13.75	20.25	27.25	41.00	51.75
Flange Ends	11.25	17.75	24.25	32.25	49.00	59.75

Kennedy Iron Body Double Gate Valves.



IRON BODY DOUBLE GATE VALVE, SCREWED.



IRON BODY DOUBLE GATE VALVE, FLANGED.

Iron Body Double Gate Valves—Screwed and Flanged.

Size	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Face to Face, Screw Ends	4	5	6	6¼	6¾	7	7⅝	8	8⅝	10	10¼	11½	11½	13¼
" Flange "	5½	6	6⅜	7¾	7⅞	8⅝	8⅝	9½	10⅛	11	11¼	11⅞	12⅝	13½
Diameter of Flanges	5	6	7	8	8½	9	9¼	10	11	12½	13½	15	16	19
Screw Ends	10.00	12.00	15.00	18.00	20.00	23.00	25.00	30.00	43.00	53.00	60.00	70.00	95.00	
Flange "	10.00	12.50	15.50	19.00	21.00	24.00	27.00	32.00	43.00	53.00	60.00	70.00	95.00	

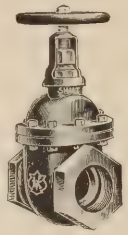


IRON BODY GATE VALVE, BELL ENDS.

Iron Body Gate Valves—Bell Ends.

These Valves are operated by a 2-inch square nut on spindle, unless otherwise ordered.

The bodies, caps, nuts, stuffing boxes and glands are made of cast iron; the gates are also cast iron, faced with composition. The seats are of composition, firmly held to the body according to the most approved practice. The stems are large and strong, to prevent twisting, and of solid gun-metal composition, and are all interchangeable. These Valves are specially constructed for street mains, and are extra strong to withstand rough usage.



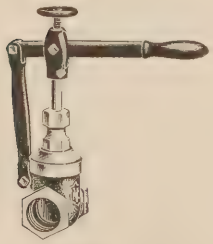
IRON BODY INDICATOR VALVE. Screwed.

Size	2	3	4	5	6	8	10	12	14	16	18	20	24
End to End of Pipe when laid in Bell	2⅞	4	4⅜	4½	5¼	5½	6½	7⅛	8	9	10	10½	11
Diameter of Bell Socket	3¼	4½	5⅝	6¾	7¾	10	12	14⅛	16⅛	18½	20½	22¾	26¾
Bell or Spigot End	$10	15	20	25	30	53	70	95	----	----	----	----	----

When ordering state if Valves should open by turning to the left or to the right. When not otherwise mentioned, we send Valves which open by turning to the left.

Iron Body Indicator Valves—Screwed and Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Screw Ends	13.75	16.50	20.25	24.00	26.75	30.00	32.50	39.00	53.50	65.00	85.00	113.00
Flange Ends	13.75	17.00	20.75	25.00	27.25	31.00	34.50	41.00	53.50	65.00	85.00	113.00



IRON BODY SLIDING STEM AND LEVER GATE VALVE.

Iron Body Sliding Stem and Lever Gate Valves. Screwed and Flanged.

Size	2½	3	3½	4	4½	5
Sliding Stem and Lever Screw Ends	16.00	20.00	22.00	25.00	28.00	30.00
" " Flange "	16.00	20.00	22.50	25.00	28.50	32.00

Size	6	7	8	9	10	12
Sliding Stem and Lever Screw Ends	35.00	48.00	58.00	65.00	75.00	100.00
" " Flange "	37.00	48.00	58.00	65.00	75.00	100.00

Iron Body Bronze Mounted Extra Heavy Double and Wedge Gate Valves.

For 125 to 250 lbs. Steam Pressure and Superheated Steam—Screwed and Flanged.

WITHOUT BY-PASS.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16
With Inside Screw	13.75	17.50	20.00	25.00	27.00	35.00	40.00	48.00	60.00	73.00	100	150	200	275
With Outside Screw and Yoke	17.50	22.50	25.00	30.00	32.50	40.00	48.00	58.00	72.00	88.00	125	175	225	300
If with Indicator Attachment, add	4.50	5.25	6.00	6.75	7.00	7.50	9.00	10.50	12.00	15.00	18	---	---	---

WITH BY-PASS.

Size	7	8	10	12	14	16	18	20
With Inside Screw	75.00	88.00	125.00	175.00	225.00	305.00	----	----
With Outside Screw and Yoke	87.00	103.00	150.00	200.00	250.00	330.00	425.00	575.00
If with Indicator Attachment, add	12.00	15.00	18.00	----	----	----	----	----

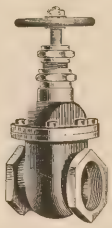
Ludlow Bronze Valves, Double Gate.



SCREWED ENDS.
Sizes, 3/8, 1/2, 3/4 and 1 inch.



SCREWED ENDS.
Sizes, 1 1/4, 1 1/2 and 2 inch.



SCREWED ENDS.
Sizes, 2 1/2 to 6 inch.



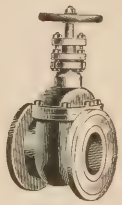
SCREWED ENDS.
Sizes, 7 inch and above.



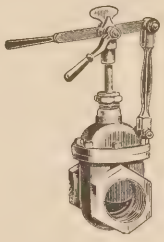
FLANGED ENDS.
Sizes up to 2 inches.



FLANGED ENDS.
Sizes, 2 1/2 to 6 inch.



FLANGED ENDS.
Sizes, 7 inches and above.



SLIDING STEM AND LOCK LEVER VALVE.

Ludlow Bronze Valves, Double Gate.

Tested at 300 Pounds Pressure Per Square Inch, Water Pressure. Test Guaranteed.

Sizes	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Face to face, Screwed	2 1/4	2 1/4	2 1/2	2 7/8	3 3/8	3 3/4	4 1/8	4 13/16
Face to face of Flanges	----	2 3/4	3	3	3 3/8	3 7/8	4 5/8	5 3/8
Diameter Standard Flanges	----	3	3 5/8	4	4 3/8	5	6	6 1/2
Screwed	1.40	1.40	1.80	2.35	3.40	4.40	6.25	13.75
Flanged	----	3.40	3.70	4.15	5.70	7.40	11.00	18.75
For Slide Stem and Lever, add to list	.80	.80	.80	.80	1.00	1.00	1.25	1.75

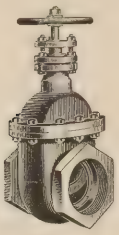
Sizes	3	3 1/2	4	4 1/2	5	6	7	8
Face to face, Screwed	5	5 5/8	6 1/4	7	7 1/4	7 1/2	----	---
Face to face of Flanges	6 1/4	6 7/8	7 1/16	7 3/4	8 1/4	9	10 1/4	10 1/2
Diameter Standard Flanges	7	7 1/2	9	9 1/2	10	11	12	13
Screwed	15.50	23.50	34.00	45.00	52.00	76.00	----	----
Flanged	21.50	30.50	43.00	55.00	64.00	88.00	120.00	158.00
For Slide Stem and Lever, add to list	2.00	2.00	2.00	2.25	2.25	2.25	----	-- -

Sizes 3/8, 1/2, 3/4 and 1 inch of our regular Screw Stem Bronze Valves have rising stem ; all other sizes have non-rising stem. We, however, make and will furnish these sizes, if so ordered, with non-rising stem at a slightly increased cost over the rising stem Valves. Unless otherwise specified, we will continue sending these sizes with rising stem.

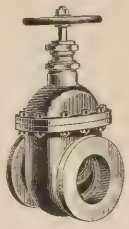
Ludlow Iron Body Gate Valves.



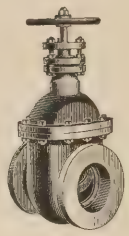
SCREWED ENDS.
Sizes to 6 inch.



SCREWED ENDS.
Sizes above 6-inch.



FLANGED ENDS.
Sizes to 6-inch.



FLANGED ENDS.
Sizes above 6-inch.

Double Gate Valves—Iron Body with Bronze Mountings.

Tested at 300 Pounds Pressure Per Square Inch, Water Pressure. Test Guaranteed.

FOR HEAVY WORKING PRESSURES EITHER SIDE OF GATE.

Size	1	1¼	1½	2	2½	3	3½	4
Face to Face of Screwed Ends	3¾	3¾	4	4⅞	5⅜	5½	7¼	7¼
Face to Face of Flanges	5	5¼	5½	5⅝	6⅛	6⅞	8¼	8¼
Diameter of Standard Flanges	4½	5	5½	6	7	7½	8½	9
End to End of Hubs or Bells	---	---	---	7	7¾	8⅝	9⅜	9¾
Depth of Hubs or Bells	---	---	---	2¼	2¼	2½	2⅝	2¾
Screwed Ends	5.00	5.50	6.00	7.00	10.25	12.25	16.50	18.00
Flanged Ends	5.50	6.00	6.25	7.50	10.75	13.25	17.50	18.50
Hub or Bell Ends	----	----	----	7.00	10.00	14.50	16.00	17.00
Spigot Ends	----	----	----	7.25	10.25	15.00	16.50	17.50
For Slide Stem and Lever, add to list	----	----	1.00	1.25	1.75	2.00	2.00	2.00
For Outside Screw and Yoke, add to list	----	----	----	----	----	8.50	9.25	10.00

Size	4½	5	6	7	8	10	12
Face to Face of Screwed Ends	9½	11	11¼	12	12⅝	13⅝	13⅝
Face to Face of Flanges	9¾	10¾	11⅛	11¼	11	13¾	14⅝
Diameter of Standard Flanges	9¼	10	11	12½	13½	16	19
End to End of Hubs or Bells	11	12	12½	13⅞	14⅛	14⅝	15
Depth of Hubs or Bells	3¼	3½	3⅞	4	4	4	4
Screwed Ends	23.00	25.00	30.50	38.00	45.00	64.00	82.50
Flanged Ends	23.50	25.50	31.00	38.00	43.50	64.50	80.00
Hub or Bell Ends	22.00	24.00	28.00	37.00	42.00	60.00	76.00
Spigot Ends	22.50	24.50	28.75	38.00	43.25	62.50	79.50
For Slide Stem and Lever, add to list	2.25	2.25	2.25	2.25	2.25	3.25	4.00
For Outside Screw and Yoke, add to list	11.00	12.00	14.00	16.00	18.00	23.00	27.50

We make these Valves also with one end Hub and other end Spigot, or any other combination of above styles, as desired.

Double Gate Valves—Iron Body with Bronze Mountings.

Tested at 1500 Pounds Pressure Per Square Inch, Water Pressure. Test Guaranteed.

FOR EXTREME WORKING PRESSURES EITHER SIDE OF GATE.

Size	1½	2	2½	3	4	5	6	7	8	10
Screwed Ends	----	13.75	20.00	24.00	35.00	61.00	68.00	-----	------	------
Flanged Ends	9.50	14.75	21.50	26.00	37.00	67.00	71.00	93.00	122.00	272.00



HIGH DUTY DOUBLE GATE VALVE.

Double Gate Valves—All Iron.

Tested at 1500 Pounds Pressure Per Square Inch, Water Pressure. Test Guaranteed.

FOR EXTREME WORKING PRESSURES EITHER SIDE OF GATE.

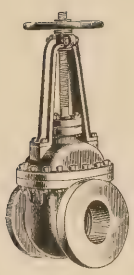
Size	2	2½	3	4	5	6	7	8	10
Screwed Ends	13.75	19.50	23.00	-----	----	61.00	----	----	----
Flanged Ends	----	21.00	25.00	35.50	----	67.00	----	111.00	250.00

DIMENSIONS IRON BODY BRONZE MOUNTED AND ALL IRON.

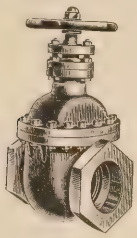
Face to Face Screwed	7⅝	8¼	10	11¼	13¾	14¾	---	----	----
Face to Face of Flanges	9 5/16	10½	11½	12⅞	19	18½	17¾	21⅞	27⅝
Diameter of Standard Flanges	7	7½	9	10	12	12	14	15	19½

Where Loose Flanges bolted on are required they are charged as extra.

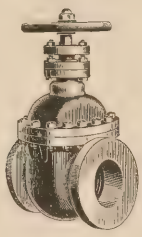
Ludlow Iron Body Gate Valves.



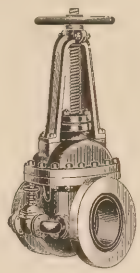
OUTSIDE SCREW AND YOKE.
For either Flanged or Screw End Valve.



SCREWED ENDS.
Style of all Sizes without Gearing.



FLANGED ENDS.
Style of all Sizes without Gearing.



OUTSIDE SCREW AND YOKE.
With By-Pass and Grooved Flanges.

Double Gate Valves, Iron Body with Bronze Mountings.

Tested at 600 Pounds Pressure Per Square Inch, Water Pressure. Test Guaranteed.

FOR VERY HIGH WORKING PRESSURES, EITHER SIDE OF GATE.

With Inside Screw.

Size	1½	2	2½	3	3½	4	4½
Face to Face of Screwed Ends	6⅜	6¼	6½	8½	8⅜	8¾	10
Face to Face of Flanges	6	7¼	8	9¼	9½	9½	11
Diameter of Standard Flanges	6	6½	7½	9	9	10	10½
End to End of Hubs or Bells	---	---	---	---	---	11¼	---
Depth of Hubs or Bells	---	---	---	---	---	3¼	---
Screwed Ends	10.00	11.00	15.00	19.50	21.50	24.00	---
Flanged Ends	12.50	13.50	19.00	23.50	25.25	28.00	36.00
Hub or Bell Ends	----	----	----	----	----	23.00	----

Size	5	6	7	8	9	10	12
Face to Face of Screwed Ends	10½	12	---	---	---	---	---
Face to Face of Flanges	12⅜	13	13¾	14¼	16¾	16¾	17½
Face to Face of Flanges with By-Pass	18	18	18	18½	19	19	23½
Diameter of Standard Flanges	11	13	14	15	16	17½	20
Size of By-Pass	1½	1½	1½	1½	1½	1½	2
End to End of Hubs or Bells	---	14	---	15	---	16¾	17⅜
Depth of Hubs or Bells	---	3⅝	---	4¼	---	4½	4½
Screwed Ends	38.00	49.50	59.00	69.00	----	----	----
Flanged Ends	41.00	55.00	64.50	73.00	95.00	110.00	148.00
Hub or Bell Ends	----	46.00	----	64.00	----	98.50	132.50
For By-Pass (Standard Size), add to list	----	25.00	25.00	25.00	25.00	25.00	29.00

With Outside Screw and Yoke.

Size	1½	2	2½	3	3½	4	4½
Screwed Ends	----	19.00	25.00	29.50	40.00	42.50	---
Flanged Ends	20.50	21.50	29.00	33.50	43.75	46.50	55.00
Hub or Bell Ends	----	----	----	----	----	41.50	----
For By-Pass (Standard Size), add to list	----	----	----	----	----	----	----

Size	5	6	7	8	9	10	12
Screwed Ends	57.00	70.50	83.00	97.00	----	---	----
Flanged Ends	60.00	76.00	88.50	101.00	125.00	140.00	181.00
Hub or Bell Ends	----	67.00	----	92.00	----	128.50	165.00
For By-Pass (Standard Size), add to list	----	25.00	25.00	25.00	25.00	25.00	29.00

Double Gate Valves—Iron Body with Bronze Mountings.

Tested at 300 Pounds Pressure Per Square Inch, Water Pressure. Test Guaranteed.

(NOT ILLUSTRATED.)

FOR HEAVY WORKING PRESSURES, EITHER SIDE OF GATE.

Sizes	14	15	16	17	18	20	22	24	28	30	36	40	42	48
Face to Face of Flanges	15¾	15¾	16	--	17	17¾	20¼	21	26½	26½	28	34½	34½	42½
Diam. of Standard Flanges	21	22¼	23½	--	25	27½	29	32	37	39	45	51	53	59
End to End of Hubs or Bells	15¾	15½	15¾	--	18	19½	19½	22¼	24½	26	26⅞	33	33	39
Depth of Hubs	4⅛	4	4⅛	--	5	5	5⅛	6¼	6½	6⅞	5¾	5½	5½	6¼
Flanged Ends	$130	148	153	184	215	254	325.00	390.00	625	690	1060	1560	1670	2425
Hub or Bell Ends	122	138	143	---	205	242	----	375.00	600	650	1020	1520	1630	2375
Spigot Ends	127	146	152	---	217	254	----	390.00	625	660	1068	1590	1710	2500
For Spur Gearing, add to list	26	26	26	16	16	16	20.00	20.00	70	70	90	90	90	160
For Bevel Gearing, add to list	28	28	28	18	18	18	24.50	24.50	95	95	125	125	125	200

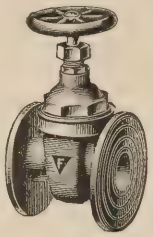
The price for By-Pass varies according to size of By-Pass and style of Valve. Prices given upon application.

Brass Gate Valves.

Renewable Vulcanized Asbestos Seat Rings.



SCREW TOP AND ENDS.
Stationary Spindle.



SCREW TOP, FLANGED ENDS.
Stationary Spindle.

Brass Gate Valves—Screwed and Flanged.

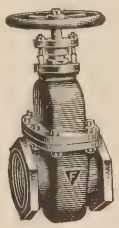
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Screwed	1.50	1.50	1.65	2.20	2.80	4.00	5.30	7.80	17.00	23.00	45.00	56.00
Flanged	----	----	4.65	5.65	7.50	9.35	14.00	16.00	26.50	35.75	57.00	68.00

Heavy Brass Gate Valves—Screwed and Flanged.

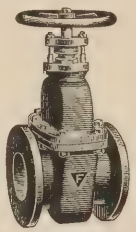
Size	½	¾	1	1¼	1½	2	2½
Screwed	3.10	3.80	5.80	7.50	9.20	12.65	27.50
Flanged	----	----	7.50	10.25	12.75	19.00	37.25

Extra Heavy Brass Gate Valves—Screwed and Flanged.

Size	½	¾	1	1¼	1½	2
Screwed	4.50	4.75	7.25	10.00	14.75	25.00
Flanged	----	----	8.75	11.50	18.75	28.00



BOLTED TOP AND BONNET.
Stationary Spindle, Screwed.



BOLTED TOP AND BONNET.
Stationary Spindle, Flanged.

Brass Gate Valves, Bolted Top—Screwed and Flanged.

Size	3	3½	4	5	6
Screwed	34.25	50.00	66.00	81.00	104.00
Flanged	39.25	58.50	73.00	88.00	113.00

Extra Heavy Brass Gate Valves, Bolted Top—Screwed and Flanged.

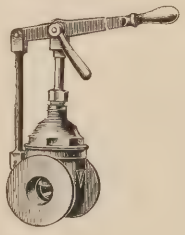
Size	4½	5	6	7	8
Screwed	73.00	91.00	116 00	164.00	195.00
Flanged	82.00	102.00	126.00	174.00	212.00

Extra Heavy Brass Gate Valves, Screwed Top—Screwed and Flanged.

Size	2	2½	3	3½	4
Screwed	21.00	29.00	38.00	50.50	61.00
Flanged	25.50	36.00	45.00	61.00	70.00



SLIDING STEM, IRON LEVER, SCREWED.



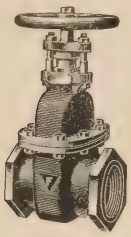
SLIDING STEM, IRON LEVER, FLANGED.

Brass Gate Valves, Sliding Stem and Lever—Screwed and Flanged.

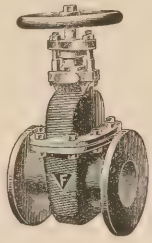
Size	⅜	½	¾	1	1¼	1½	2	2½	3
Screwed	2.70	2.95	3.60	4.30	5.60	7.05	9.80	20.00	27.00
Flanged	----	----	----	9.00	10.95	15.75	18.00	29.50	39.75

Iron Body Gate Valves.

Renewable Vulcanized Asbestos Seat Rings.



STATIONARY SPINDLE, SCREWED.



STATIONARY SPINDLE, FLANGED.

Iron Body Gate Valves, Composition Mountings—Screwed and Flanged.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16	18	20	24
Screwed	7.50	10.75	14.00	18.25	20.50	25.00	27.00	34.00	41.00	51.50	73.00	100	---	---	---	---	---
Flanged	7.50	10.75	14.00	18.25	20.50	25.00	27.00	34.00	41.00	51.50	73.00	100	168	223	292	346	494

EXTRA HEAVY.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16	18	20	24
Screwed	11.25	16.15	21.00	27.35	30.75	37.50	40.50	51.00	61.50	77.25	109.50	150	---	---	---	---	---
Flanged	11.25	16.15	21.00	27.35	30.75	37.50	40.50	51.00	61.50	77.25	109.50	150	200	265	332	405	810



RISING SPINDLE, SCREWED.



RISING SPINDLE, FLANGED.

Iron Body Gate Valves, Composition Mountings—Screwed and Flanged.

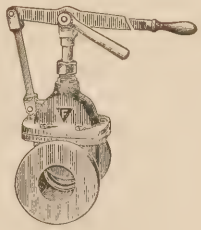
Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16	18	20	24
Screwed	16.50	22.75	26.00	31.75	36.50	44	51	61	71	91	124	154	---	---	---	---	---
Flanged	16.50	22.75	26.00	31.75	36.50	44	51	61	71	91	124	154	232	300	417	487	668

EXTRA HEAVY.

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12	14	16	18	20	24
Screwed	22.00	26.25	32.25	39.00	43.50	52	60	74	90	110	158	218	---	---	-	---	---
Flanged	22.00	26.25	32.25	39.00	43.50	52	60	74	90	110	158	218	300	383	533	646	1100



SLIDING STEM AND LEVER, SCREWED.



SLIDING STEM AND LEVER, FLANGED.

Iron Body Sliding Stem and Lever Gate Valves.

Size	2½	3	3½	4	4½	5	6	7	8
Screwed	14.40	18.70	23.85	26.65	33.80	36.00	43.65	53.30	65.05
Flanged	14.40	18.70	23.85	26.65	33.80	36.00	43.65	53.30	65.05

Seat Rings for Brass and Iron Body Gate Valves Improved Vulcanized Asbestos.



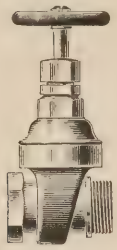
Size	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½
Each	.08	.08	.10	.14	.16	.20	.30	.70	.90	1.10	1.30	1.60

Size	5	6	7	8	10	12	14	16	18	20	24
Each	1.90	2.36	2.96	3.58	4.00	6.00	7.20	11.20	18.00	24.00	36.00

Jenkins Bros. Gate Valves.



BRASS GATE VALVE.
Stationary Spindle.



BRASS HOSE END
GATE VALVE.



BRASS GATE VALVE.
Traveling Spindle.

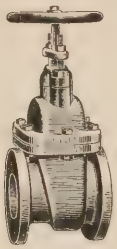
Jenkins Brass Gate Valves.

Size	½	¾	1	1¼	1½	2	2½	3
Brass Gate Valves, Screwed	2.00	2.50	3.25	4.25	5.25	7.50	14.00	20.00
" " " Flanged	3.50	4.50	6.00	7.50	10.00	14.00	21.00	28.00
" Hose Gate Valves	----	----	3.70	4.95	6.15	8.75	15.75	22.00
Hose Caps, Rough, without Chain or Swivel	----	.60	.75	1.15	1.50	2.00	2.50	----
" " Finished, with Chain	----	1.00	1.25	1.75	2.25	3.00	3.50	----

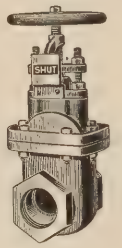
Iron Body Gate Valves—Composition Mounted.



IRON BODY GATE VALVE.
Screwed.



IRON BODY GATE VALVE.
Flanged.



INDICATOR GATE
VALVE.

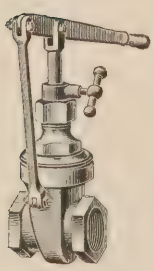
Jenkins Iron Body Gate Valves.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Thickness of Flanges	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/16	1 1/8	1 1/8	1 3/16	1 1/4
Diameter of Flanges	6	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19
Face to Face, Screwed	5½	6¼	7	7⅝	8⅞	8⅞	9⅛	9⅜	11¼	12¾	13	14¼	14¾
" " Flanged	6	7	7½	7⅝	8½	8⅞	9½	10	11	12½	13⅜	14¼	14⅝
Gate Valves, Screwed	8.00	12.00	15.00	18.00	21.00	29.00	30.00	36.00	50.00	62.00	71.00	85.00	120.00
" " Flanged	9.00	13.00	16.00	19.00	22.50	31.00	32.00	38.00	50.00	62.00	71.00	85.00	120.00
Hub or Spigot Gate Valves	9.00	12.00	15.00	18.00	21.00	29.00	30.00	36.00	50.00	62.00	71.00	85.00	120.00

Indicator Gate Valves.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Indicator Gate Valves, Screwed	13.00	17.00	21.00	24.00	28.00	36.00	38.00	44.00	60.00	70.00	79.00	95.00	130.00
" " " Flanged	14.00	18.00	22.00	25.00	30.00	38.00	40.00	46.00	60.00	70.00	79.00	95.00	130.00

For sizes above 12 inches we furnish net prices.



SLIDING STEM
AND LEVER
GATE VALVE.

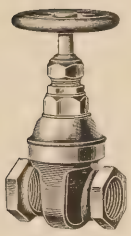
Brass Sliding Stem and Lever Gate Valves.

Size	½	¾	1	1¼	1½	2	2½	3
Sliding Stem and Lever Gate Valves, Brass	2.50	3.20	4.25	5.60	6.80	9.50	16.25	22.50

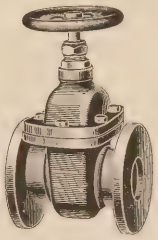
Iron Body Sliding Stem and Lever Gate Valves—Composition Mounted.

Size	2	2¼	3	3½	4	5	6	7	8
Diameter of Flanges, Gate Valves	6	7	7½	8½	9	10	11	12½	13½
Face to Face, Gate Valves, Scwd & Flgd	6	7¼	7⅝	7⅝	8⅜	9½	10	11	12¼
Sliding Stem & Lever Gate Valves, Scwd	10.00	14.25	17.50	20.75	24.00	33.25	39.50	53.75	66.00
" " " " " Flgd	11.00	15.25	18.50	21.75	25.50	35.25	41.50	53.75	66.00

Chapman Gate Valves.



COMPOSITION, SCREWED.



IRON BODY, FLANGED.
With Bolted Top.

Chapman Composition Steam and Water Gate Valves with Brass or Babbitt Metal Seats.

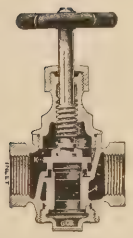
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Face to Face, Screw Ends	2⅜	2⅜	2⅜	2¾	3⅜	3 1/16	4⅛	4¾	5 9/16	6⅝	8⅜	8 15/16
" " Flange "	2½	2½	2 9/16	3	3 9/16	3 15/16	4 5/16	5¼	5¾	7	8¼	8⅞
Diameter of Flanges	2½	2½	3	3	4	4½	5	6	7	7	8½	9
Screw Ends	1.35	1.35	1.50	1.85	2.55	3.30	4.50	6.70	11.35	16.50	30.50	39.00
Flange "	2.00	2.00	2.50	2.85	4.00	5.00	7.25	10.25	16.35	20 75	38.00	46 25
Sliding Stem and Lever, extra	.70	.70	.70	.70	.70	.75	1.00	1.00	1.10	1.65	1.65	1.65

Iron Body Babbitt Seat Gate Valves for Steam and Water—Screw or Flange Ends.

Size	2½	3	3½	4	4½	5	6	7	8	9	10	12	14
Face to Face, Screw Ends	6⅝	7½	8⅜	9⅝	9¾	10¼	11⅜	12⅛	12½	13⅛	13⅞	----	----
" Flange "	7⅞	8¼	8⅞	9⅜	10¼	9⅝	10⅞	11½	11⅞	12⅞	13⅝	14⅝	15⅞
Screw Ends, Inside Screw	9.00	11.25	14.50	17.00	23.50	23.50	29.50	37.00	45.00	57.00	72.00	101.00	----
Flange " "	9.25	11.75	15.00	17.50	23.50	23.50	28.25	34.50	42.50	53.50	67.00	89.00	118.00
Sliding Stem & Lever, extra	2.10	2.50	3.25	3.25	3 75	3.75	5.00	5.00	8.75	8.75	10.25	11.60	----

Size	15	16	18	20	22	24	26	30	36	40	42
Face to Face, Flange Ends	16⅝	18¾	20	21	22½	24	----	----	----	----	----
Flange Ends, Inside Screw	145.00	155.00	210.00	250.00	290.00	370.00	435.00	658.00	900.00	1425.00	1530.00
Geared Indicator, Ins. Scw., extra	----	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
By-Pass, Inside Screw, extra	----	46.00	48.00	51.00	60.00	64.00	64.00	80.00	114.00	114.00	116.00

The Bashlin Valve.



BASHLIN GLOBE VALVE.

The Bashlin Valve does not have its seat cast solid in the diaphragm of the Valve, as is found in ordinary valves, but it is placed temporarily within the diaphragm. With this construction, when the seat ring wears out, it can be removed and replaced with a new one while valve is under pressure. This is made possible by having two auxiliary seats, one on top of diaphragm, and the other on the flange of the disc. When completed every valve is tested under a hydraulic pressure of 400 lbs. to the square inch.

Bashlin Valves.

Size	⅜	½	¾	1	1¼	1½	2	2½
Brass Globe Valves, Screwed	1.50	1.60	2.20	2.80	4.00	5.50	8.80	16.00
" " Flanged	----	4.25	5.50	6.65	9.85	12.15	18.25	26.60
Brass Angle Valves, Screwed	----	1.60	2.20	2.80	4.00	5.50	----	----
Seat Rings, Copper Hardened Babbitt, Rubber or Amalgamated Copper	.07	.07	.08	.10	.14	.20	.28	.35
Disc	.07	.07	.08	.10	.14	.20	.28	.35

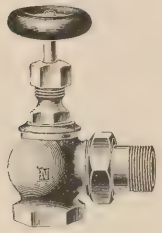
The Bashlin Y or Blow-off Valve.

It cannot be surpassed for a Blow-off Valve, and is especially recommended for use in paper mills, sugar houses, or any place where the passage of a thick fluid is required.

NOTE.—For sulphite, pulp and paper mills we will furnish the working parts, disc and seat ring in phosphor bronze; also the body and trimmings in an anti-acid metal.

Size	½	¾	1	1¼	1½	2	2½
Brass, Screwed	2.50	4.00	5.00	6.00	8.50	16.00	21.00

Radiator Valves.



WITH UNION.



WITHOUT UNION.

"N" Radiator Valves with Jenkins Disc.

Size	¾	1	1¼	1½
Wood Wheel, Rough Body, Nickel Plated all over, with Union	3.80	4.75	6.40	8.10
" " " without Union	2.85	3.65	4.90	6.75

Standard Radiator Valves with Brass Disc.



WITH UNION.



WITHOUT UNION.

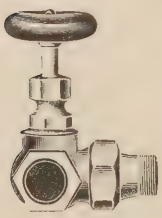
Standard Radiator Valves with Union.

Size	½	¾	1	1¼	1½	2
Rough Body	2.15	2.50	3.30	4.40	5.90	9.25
Finished Body	3.00	3.40	4.25	5.75	7.75	12.00
Rough Body, Nickel Plated	2.50	2.90	3.75	5.00	6.50	10.00
Finished Body, Nickel Plated	3.35	3.80	4.70	6.35	8.35	12.75

Standard Radiator Valves without Union.

Size	½	¾	1	1¼	1½	2
Rough Body	1.40	1.75	2.35	3.25	4.35	6.85
Finished Body	2.15	2.50	3.25	4.35	5.75	9.00
Rough Body, Nickel Plated	1.70	2.10	2.75	3.70	4.85	7.60
Finished Body, Nickel Plated	2.45	2.85	3.65	4.80	6.25	9.75

Standard Corner Radiator Valves.



WITH UNION, RIGHT HAND.



WITHOUT UNION, LEFT HAND.

Standard Corner Valves.

Size	¾	1	1¼	1½	2
Rough Body, with Union	3.50	4.30	5.85	7.75	12.25
" " Nickel Plated	3.80	4.75	6.40	8.10	13.10
" without Union, "	2.50	3.20	4.50	6.25	10.50
" " "	2.85	3.65	4.90	6.75	11.00

NOTE.—Corner Valves furnished right hand or left hand, as may be required. Cuts show position of left hand and right hand Valves. Corner Valves always furnished with right hand thread unless otherwise specified.

Jenkins Bros. Radiator Valves.



WOOD WHEEL GLOBE RADIATOR VALVE.



WOOD WHEEL ANGLE RADIATOR VALVE.



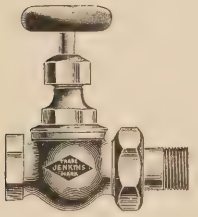
LOCK SHIELD ANGLE RADIATOR VALVE.

Radiator Globe or Angle Valves—Screwed Ends.

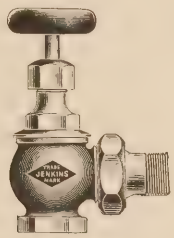
Right or Left Hand Threads, as ordered.

Size	¼	⅜	½	¾	1	1¼	1½	2
No. 1. Wood Wheel, Rough Body, Finished Trimmings	1.50	1.85	2.00	2.50	3.20	4.50	6.25	10.50
" 2. " Finished all over	2.00	2.25	2.50	3.00	3.75	5.25	7.25	11.75
" 3. " Rough Body, Nickel Plated Trimmings	1.80	2.15	2.30	2.80	3.50	4.80	6.55	10.80
" 4. " " " all over	1.90	2.25	2.40	2.90	3.60	4.90	6.65	10.90
" 5. " Finished and " "	2.40	2.70	2.90	3.40	4.15	5.65	7.65	12.15

Lock Shield Valves, same price as Wood Wheel Valves.



WOOD WHEEL GLOBE RADIATOR VALVE.
Male Union.



WOOD WHEEL ANGLE RADIATOR VALVE.
Male Union.

Radiator Globe or Angle Valves.

With Male or Female Unions, as ordered.

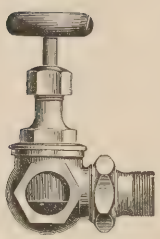
Size	½	¾	1	1¼	1½	2
No. 6. Wood Wheel, Rough Body, Finished Trimmings, with Union	2.75	3.50	4.30	5.85	7.75	12.60
" 7. " Finished all over, "	3.20	4.00	4.80	6.40	8.75	13.85
" 8. " Rough Body, Nickel Plated Trimmings, "	3.05	3.80	4.60	6.15	8.05	12.90
" 9. " " " all over "	3.15	3.90	4.70	6.25	8.15	13.00
" 10. " Finished and " " "	3.60	4.40	5.20	6.80	9.15	14.25

Lock Shield Valves, same price as Wood Wheel Valves.

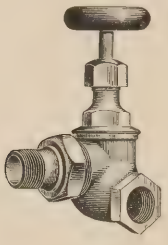
Jenkins Bros. Valves.



REGULAR PATTERN.
Right Hand.



REGULAR PATTERN.
With Male Union.
Right Hand.



OFFSET PATTERN.
With Male Union.
Left Hand.



OFFSET PATTERN.
Right Hand.

Corner Radiator Valves, Regular and Offset Pattern—Screwed Ends.

Right or Left Hand Threads, as ordered.

Size	½	¾	1	1¼	1½	2
No. 1. Wood Wheels, Rough Body, Finished Trimmings	2.25	2.75	3.50	5.00	7.00	11.55
" 2. " Finished all over	2.75	3.25	4.25	5.75	8.00	12.95
" 3. " Rough Body, Nickel Plated Trimmings	2.55	3.05	3.80	5.30	7.30	11.85
" 4. " " " all over	2.65	3.15	3.90	5.40	7.40	11.95
" 5. " Finished and " "	3.15	3.65	4.65	6.15	8.40	13.35

With Male or Female Unions, as ordered.

Size	½	¾	1	1¼	1½	2
No. 6. Wood Wheels, Rough Body, Finished Trimmings	3.05	3.85	4.75	6.45	8.55	13.85
" 7. " Finished all over	3.50	4.40	5.30	7.05	9.65	15.25
" 8. " Rough Body, Nickel Plated Trimmings	3.35	4.15	5.05	6.85	8.85	14.15
" 9. " " " all over	3.45	4.25	5.15	6.95	8.95	14.25
" 10. " Finished and " "	3.90	4.80	5.70	7.45	10.05	15.65

Lock Shield Valves, same price as Wood Wheel Valves.

Offset Globe Valves—Screwed Ends.

Right or Left Hand Threads, as ordered.



OFFSET GLOBE VALVE.

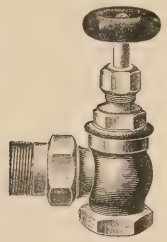
Size	¾	1	1¼	1½	2
No. 1. Rough Body, Finished Trimmings	2.75	3.50	5.00	7.00	11.55
" 2. Finished all over	3.25	4.25	5.75	8.00	12.95
" 3. Rough Body, Plated Trimmings	3.05	3.80	5.30	7.30	11.85
" 4. " " all over	3.15	3.90	5.40	7.40	11.95
" 5. Finished and " "	3.65	4.65	6.15	8.40	13.35

With Male or Female Unions, as ordered.

Size	¾	1	1¼	1½	2
No. 6. Rough Body, Finished Trimmings	3.85	4.75	6.45	8.55	13.85
" 7. Finished all over	4.40	5.30	7.05	9.65	15.25
" 8. Rough Body, Plated Trimmings	4.15	5.05	6.85	8.85	14.15
" 9. " " all over	4.25	5.15	6.95	8.95	14.25
" 10. Finished and " "	4.80	5.70	7.45	10.05	15.65

Lock Shield Valves, same price as Wood Wheel Valves.

Quick Opening Steam Radiator Valves.



QUICK OPENING STEAM VALVE.
With Union.



QUICK OPENING STEAM VALVE.
Without Union.

Quick Opening Steam Radiator Valves, with Union, Opened or Closed with Three Movements.

No.	Size	With Brass Disc. ¾	1	1¼	1½	2	No.	With Jenkins Disc. ¾	1	1¼	1½	2
5.	Rough Body, Finished Trimmings	2.45	3.25	4.50	6.50	10.00	No. 10.	3.50	4.30	5.85	7.75	12.60
6.	" " Plated "	2.60	3.35	4.90	6.65	10.25	" 11.	3.75	4.65	6.25	8.00	12.85
7.	" " " all over	2.85	3.65	5.05	7.10	10.85	" 12.	3.80	4.75	6.40	8.10	13.10
8.	Finished Body	3.00	3.85	5.25	7.50	11.50	" 13.	4.00	4.80	6.40	8.75	13.85
9.	" " Plated all over	3.40	4.30	5.80	8.10	12.35	" 14.	4.25	5.25	7.00	9.25	14.35

Quick Opening Steam Radiator Valves, without Union, Opened or Closed with Three Movements.

No.	Size	With Brass Disc. ¾	1	1¼	1½	2	No.	With Jenkins Disc. ¾	1	1¼	1½	2
20.	Rough Body, Finished Trimmings	1.60	2.25	3.25	4.50	7.00	No. 25.	2.50	3.20	4.50	6.25	10.50
21.	" " Plated "	1.85	2.40	3.60	4.85	7.25	" 26.	2.70	3.50	4.75	6.50	10.75
22.	" " " all over	1.95	2.65	3.70	5.00	7.75	" 27.	2.85	3.65	4.90	6.75	11.00
23.	Finished Body	2.15	2.85	4.00	5.50	8.50	" 28.	3.00	3.75	5.25	7.25	11.75
24.	" " Plated all over	2.50	3.25	4.45	6.00	9.25	" 29.	3.10	4.00	5.40	7.75	12.25

Quick Opening Hot Water Radiator Valves.



QUICK OPENING HOT WATER VALVE.
With Union.



QUICK OPENING HOT WATER VALVE.
Without Union.

Quick Opening Hot Water Radiator Valves, with Union.

No.	Size	¾	1	1¼	1½	2
99A.	Rough Body, Finished Trimmings	2.45	3.25	4.50	6.50	10.00
100A.	" " Plated "	2.60	3.35	4.90	6.65	10.25
101A.	" " " all over	2.85	3.65	5.05	7.10	10.85
102A.	Finished Body	3.00	3.85	5.25	7.50	11.50
103A.	" " Plated all over	3.40	4.30	5.80	8.10	12.35

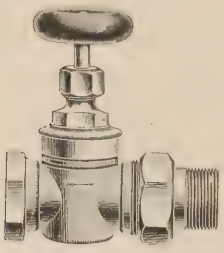
Quick Opening Hot Water Radiator Valves, without Union.

No.	Size	¾	1	1¼	1½	2
109A.	Rough Body, Finished Trimmings	1.60	2.25	3.25	4.50	7.00
110A.	" " Plated "	1.85	2.40	3.60	4.85	7.25
111A.	" " " all over	1.95	2.65	3.70	5.00	7.75
112A.	Finished Body	2.15	2.85	4.00	5.50	8.50
113A.	" " Plated all over	2.50	3.25	4.45	6.00	9.25

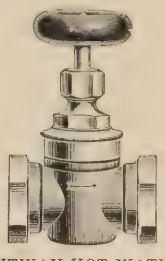
Order by number and size only.

Union Valves threaded right hand on Union, right hand on bottom.
Valves without Union threaded left on side, right on bottom.

Quick Opening Hot Water Radiator Valves.



STRAIGHTWAY HOT WATER VALVE.
With Union.



STRAIGHTWAY HOT WATER VALVE.
Without Union.

Quick Opening Straightway Hot Water Radiator Valves—With Union.

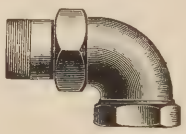
Size	¾	1	1¼	1½	2
No. 114. Rough Body, Finished Trimmings	2.45	3.25	4.50	6.50	10.00
" 115. " " Plated "	2.60	3.35	4.90	6.65	10.25
" 116. " " " all over	2.85	3.65	5.05	7.10	10.85
" 117. Finished Body	3.00	3.85	5.25	7.50	11.50
" 118. " " Plated all over	3.40	4.30	5.80	8.10	12.35

Quick Opening Straightway Hot Water Radiator Valves—Without Union.

Size	¾	1	1¼	1½	2
No. 119. Rough Body, Finished Trimmings	1.60	2.25	3.25	4.50	7.00
" 120. " " Plated "	1.85	2.40	3.60	4.85	7.25
" 121. " " " all over	1.95	2.65	3.70	5.00	7.75
" 122. Finished Body	2.15	2.85	4.00	5.50	8.50
" 123. " " Plated all over	2.50	3.25	4.45	6.00	9.25

All threads right hand. Order by size and number.

Union Elbows and Elbow Valves.



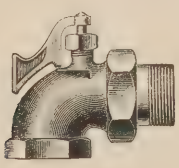
UNION ELBOW.

Union Elbows.

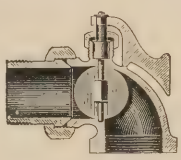
Size	¾	1	1¼	1½	2
No. 130. Rough Body, Plain	1.75	2.25	2.95	3.70	6.00
" 131. " " Plated Trimmings	1.90	2.40	3.10	3.85	6.15
" 132. " " " all over	2.00	2.50	3.20	4.00	7.00
" 133. Finished all over	2.20	2.75	3.60	4.60	7.50
" 134. " and Plated all over	2.40	3.00	3.90	4.85	8.50

Both threads right hand. Order by size and number only.

Combination Union Elbow Valves—For Hot Water.



UNION ELBOW VALVE.



SECTION.

Union Elbow Valves.

Size	¾	1	1¼	1½	2
Rough Body, Finished Trimmings, Plated all over	2.85	3 65	5 05	7.10	10.85

Automatic Air Valves.



No. 1.

PERFECTED DUPLEX.

Made with separate air tube and water passage.

Sizes ⅛ or ¼ inch.

Each 1.15



No. 2.

PERFECTED DUPLEX.

With Heat Controller.

Desirable for controlling the heat of a radiator in mild weather when full surface is not required.

Sizes ⅛ or ¼ inch.

Each 1.15

Heat Controller, .15 net each extra.



No. 3.

PERFECTED DUPLEX.

Especially adapted for coils, risers or indirect radiation.

Size ¼ inch only.

Each 1.15



No. 4.

PERFECTED DUPLEX.

Especially adapted for fine residence work, where it is desirable to conduct the foul air from the radiator to the basement.

Sizes ⅛ or ¼ inch.

Each 1.55



No. 7.

VACUUM STEAM AIR VALVE.

Will automatically vent the radiator, close by flotation against water and by expansion against steam. When radiator is shut off the vacuum feature of this Valve prevents the radiator from again filling with cold air.

Sizes ⅛ or ¼ inch.

Each 2.00



No. 6.

PERFECTED DUPLEX.

With Lock Shield.

Made with a special key attachment to prevent tampering with valve after adjustment.

Sizes ⅛ or ¼ inch.

Each 1.35



EUREKA AIR VALVE.

Elbow Connection.



EUREKA AIR VALVE.

Straight Connection.

A high grade competition Air Valve in which the expansion piece is independent of the float, which is closed, insuring perfect flotation.

Size ⅛ inch, Elbow or Straight Connection.

Each 1.00

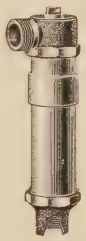


DAVIS AIR VALVE.

Closes both by flotation and expansion.

Size ..... ⅛

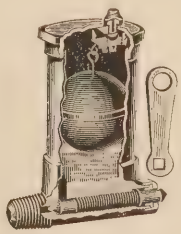
Each 1.25



EXPANSION AIR VENT VALVE.

For relieving steam mains and risers of accumulated air. Adapted for extreme high and low pressures; length, 7 inches; inlet and outlet for ¾-inch pipe connection.

Each 10.00



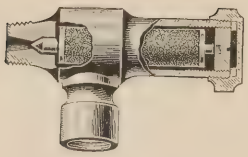
HOT WATER AIR VALVE.

Automatic and positive for hot water radiation.

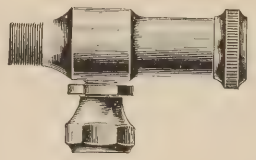
Size ..... ⅛

Each 3.00

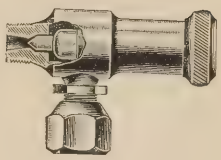
Radiator Air Valves.



Style A.
AUTOMATIC STEAM AIR VALVE.



Style B.
AUTOMATIC STEAM AIR VALVE.
Union Connection.



Style C.
AUTOMATIC STEAM AIR VALVE.
For Drip Line System.

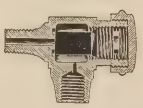
Styles A and B are made with metal seats, are simple in construction and recommended as a high grade competition expansion air valve.

Style A. Size ⅛ x ⅛, per dozen 7.50
" B. " ⅛ x ⅛, " " 8.35

Extra strong, metal seat, union and locknut connection, with conical metal rotary seat.
Size, ⅛-inch inlet, ¼-inch Drip.
Per dozen 10.00



JENKINS AUTOMATIC AIR VALVE.



SECTION.

Finished and Nickel Plated.

Per dozen 7.50



WITH UNION.
DRIP CONNECTION.

Finished and Nickel Plated.

Per dozen, ⅛-inch inlet, ⅛-inch union 9.50
" ⅛ " ¼ " 10.00
" ¼ " ¼ " 10.00



DRIP CUP.

Drip Cups, Nickel Plated.

Per dozen 2.00



AUXILIARY VALVE AND DRIP CUP.
Finished and Nickel Plated.

Per dozen 2.50

Jenkins Auxiliary Valve and Drip Cup

is so designed that when attached to the Jenkins Automatic Air Valve the latter can be used either as an automatic, or a direct valve with a drip cup.

By its use the automatic can be kept under control of the attendants, and in mild weather, when kept closed, it prevents the radiator from fully heating.

Wood Wheel and Key Air Valves.



WOOD WHEEL AIR VALVE.
For Steam Radiator.

Size	⅛	¼
Nickel Plated, each	.70	.75



HOT WATER RADIATOR VALVE.
With Loose Key.

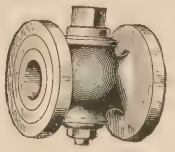
Size	⅛	¼
Nickel Plated, each	.75	.80

Three Keys furnished with each dozen Valves, additional Keys charged extra.

Standard Brass Cocks.



ACID METAL COCK.
Screwed.



ACID METAL COCK.
Flanged.

Standard Acid (Ajax) Metal Cocks.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Screwed	.50	.75	1.00	1.25	1.50	2.50	3.25	5.00	10.00	14.00	24.00	35.00	80.00	100.00
Flanged	----	----	----	---	3.70	5.40	6.60	10.00	15.00	22.00	36.00	50.00	106.00	140.00

Standard Brass Gas Service and Meter Cocks.



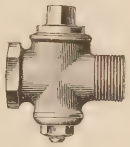
GAS SERVICE COCK.
Square Head.



GAS SERVICE COCK.
Flat Head.



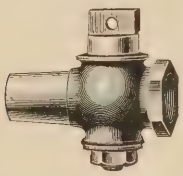
GAS SERVICE COCK.
Tee Head.



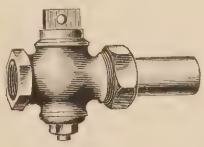
GAS SERVICE COCK.
Male and Female.

Gas Service Cocks.

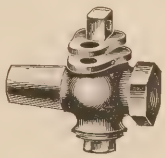
Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Square and Flat Head	.75	.75	.85	.95	1.15	1.50	2.25	3.10	5.00	11.00	16.00
Tee Head	.75	.75	.85	.95	1.15	1.50	2.25	3.10	5.00	----	----
Male and Female	--	1.00	1.00	1.30	1.40	1.95	3.00	4.25	6.00	----	----
With Check Pin	.90	.90	1.00	1.10	1.35	1.70	2.50	3.40	5.35	----	----



GAS METER COCK.



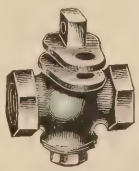
UNION METER COCK.



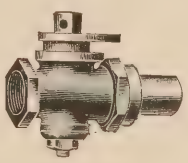
LOCK METER COCK.

Meter and Lock Meter Cocks.

Size	1/2	3/4	1	1 1/4	1 1/2	2
Meter Cocks, Square, Flat Head or T Head	1.30	1.40	1.95	3.00	4.25	6.00
Union Meter Cocks, Square, Flat Head or T Head	1.40	1.55	2.20	3.40	5.00	7.05
Lock "	1.40	1.75	2.30	3.85	5.50	7.70



LOCK SERVICE COCK.



LOCK UNION METER COCK.

Lock Service and Lock Union Meter Cocks.

Size	1/2	3/4	1	1 1/4	1 1/2	2
Lock Service Cock	1.30	1.60	2.10	3.50	5.00	7.00
" Union Meter Cock	1.50	1.80	2.50	4.00	5.50	8.00

Standard Brass Steam Cocks.



SQUARE HEAD.



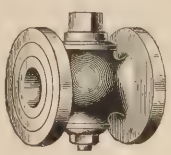
FLAT HEAD.



TEE HEAD.

Brass Steam Cocks, Square, Flat and Tee Head—Screwed.

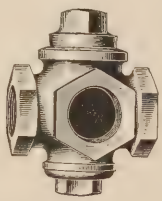
Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Square, Flat and T Head	.85	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50	38.50	50.00
Male and Female	1.35	1.35	1.45	2.00	2.50	3.00	5.35	6.75	9.85	17.50	25.75	----	----
With Check	1.00	1.00	1.15	1.40	1.90	2.55	3.95	5.15	7.65	15.00	23.25	39.50	51.50



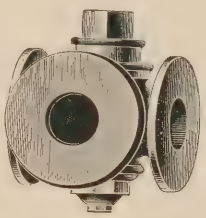
STEAM COCK.
Flanged.

Brass Steam Cocks—Flanged.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Square or Flat Head	4.75	5.50	7.30	9.70	11.75	18.00	27.50	43.00	62.00	84.00	150.00	275.00



THREE WAY.
Screwed.



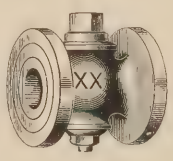
THREE WAY.
Flanged.

Brass Steam Cocks—Three Way.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Screwed	2.50	3.00	3.75	5.75	7.15	11.00	18.75	26.00	50.00	70.00
Flanged	7.75	8.75	11.25	14.75	17.75	27.00	38.25	57.00	85.00	121.00



EXTRA HEAVY.
Screwed.



EXTRA HEAVY.
Flanged.

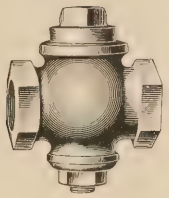
Brass Steam Cocks, Extra Heavy Screwed Ends.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each	1.30	1.50	2.00	2.85	4.00	6.75	8.50	13.50	25.00	37.00	54.00	75.00

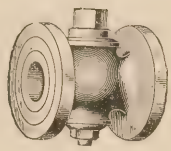
Brass Steam Cocks, Extra Heavy—Flanged Ends.

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each	6.50	7.75	10.00	14.25	17.25	27.00	41.00	63.00	84.00	120.00

Iron Cocks—Standard and Extra Heavy.



IRON COCK, SCREWED.



IRON COCK, FLANGED.

Iron Cocks—Screwed.

Size	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
All Iron	.85	.90	1.05	1.30	1.60	1.95	2.70	4.40	6.75	12.00	15.50	32.00	45.00
Iron, with Brass Washer		1.00	1.20	1.55	1.95	2.35	3.20	5.15	7.75	14.00	19.00	38.00	53.00
" " " Plug	1.25	1.30	1.60	1.90	2.65	3.75	5.25	8.75	13.00	27.50	36.50	67.00	94.00
" " " " and Washer		1.40	1.75	2.15	3.00	4.15	5.75	9.50	14.00	29.50	40.00	73.00	102.00

Iron Cocks—Flanged.

Size	1	1¼	1½	2	2½	3	3½	4	5	6
All Iron	2.25	2.75	3.25	4.25	6.25	9.50	15.00	19.00	36.00	50.00
Iron, with Brass Washer	2.50	3.10	3.65	4.75	7.00	10.50	17.00	22.50	42.00	58.00
" " " Plug	3.00	3.75	5.00	7.00	10.50	15.75	30.00	40.00	70.00	100.00
" " " " and Washer	3.25	4.10	5.40	7.50	11.25	16.75	32.00	43.50	76.00	108.00

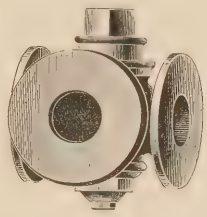
Extra Heavy Iron Cocks—Screwed and Flanged.

(NOT ILLUSTRATED.)

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
All Iron, Screwed	1.15	1.25	1.75	2.10	2.80	3.65	6.50	9.00	16.75	22.50	45.00	62.00
Iron, with Brass Washer, Screwed	1.25	1.40	2.00	2.45	3.20	4.15	7.25	10.00	18.75	26.00	51.00	70.00
" " " Plug, "	1.70	2.25	2.80	3.85	5.60	7.00	13.25	19.00	42.00	56.00	98 00	133.00
" " " " and Washer, "	1.80	2.40	3.05	4.20	6.00	7.50	14.00	20.00	44.00	59.50	104.00	141.00
All Iron, Flanged			3.15	3.85	4.90	6.10	9.10	13.30	21.70	28.00	51.80	70.00
Iron, Brass Washer, Flanged			3.40	4.20	5.30	6.60	9.85	14.30	23.70	31.50	57.80	78.00
" " Plug and Washer, Flanged			4.45	6.00	8.10	10.00	16.75	24.25	49.00	65.00	111.00	150.00



IRON COCK, THREE-WAY, SCREWED.



IRON COCK, THREE-WAY, FLANGED.

Three-Way Iron Cocks—Screwed.

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6
All Iron	1.65	1.80	2.05	2.65	3.65	5.35	7.50	14.00	19.00	36.50	52.00
Iron, with Brass Washer	1.80	2.05	2.40	3.05	4.15	6.10	8.50	16.00	22.50	42.50	60.00
" " " Plug	2.20	2.40	3.10	4.50	6.25	9.75	13.75	30.00	40.00	71.50	100.00
" " " " and Washer	2.35	2.65	3.45	4.90	6.75	10.50	14.75	32.00	43.50	77.50	108.00

Three-Way Iron Cocks—Flanged.

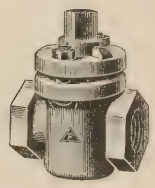
Size	1	1¼	1½	2	2½	3	3½	4	5	6
All Iron	3.75	4.25	5.25	7.00	9.00	12.75	20.00	26.00	44.00	60.00
Iron, with Brass Washer	4.00	4.60	5.65	7.50	9.75	13.75	22.00	29.50	50.00	68.00
" " " Plug	4.50	5.25	7.00	9.50	13.25	19.00	36.00	47.00	80.00	108.00
" " " " and Washer	4.75	5.60	7.40	10.00	14.00	20.00	38.00	50.50	86.00	116.00

Extra Heavy Three-Way Iron Cocks—Screwed and Flanged.

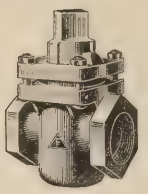
(NOT ILLUSTRATED.)

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6
All Iron, Screwed	1.80	2.50	2.80	3.90	5.60	8.40	12.00	21.00	28.00	56.00	77.00
Iron, with Brass Washer, Screwed	1.95	2.75	3.15	4.30	6.10	9.15	13.00	23.00	31.50	62.00	85.00
" " " Plug, "	2.80	3.50	4.50	6.75	9.25	15.50	22.00	46.00	62.00	107.00	146.00
" " " " and Washer, "	2.95	3.75	4.85	7.15	9.75	16.25	23.00	48.00	65.50	113.00	154.00
All Iron Three-Way, Flanged		4.50	5.40	7.00	9.25	12.60	18.30	28.25	36.40	66.00	89.00
Iron Three-Way Brass Washer, Flanged		4.75	5.75	7.40	9.75	13.35	19.30	30.25	39.90	72.00	97.00
" " " " Plug and Washer, Flgd.		5.75	7.50	10.25	13.40	20.50	29.30	55.00	74.00	123.00	166.00

Brass Cocks, Vulcanized Asbestos Packed.



SCREWED ENDS.
Sizes ¼ to 2 Inches.



SCREWED ENDS.
Sizes 2½ to 4 Inches.

Brass Cocks, Vulcanized Asbestos Packed—Screwed.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Each	3.35	3.35	3.35	4.20	5.60	8.00	10.35	16.00	26.50	37.50	50.50	64.00

EXTRA HEAVY.

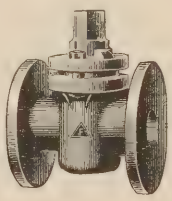
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Each	3.75	3.75	3.75	4.75	6.30	9.00	11.60	18.00	30.00	42.00	66.00	82.50

Brass Stop and Waste Cocks.

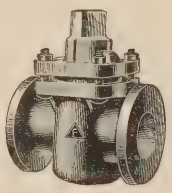
Size	½	¾	1	1¼	1½	2
Each	4.00	5.25	8.00	10.50	13.00	21.00

Brass Cocks—One Flanged End, One Screwed End.

Size	1	1¼	1½	2	2½	3
Each	8.00	10.50	13.00	21.00	33.00	47.00



FLANGED ENDS.
Sizes 1 to 2 Inches.



FLANGED ENDS.
Sizes 2½ to 5 Inches.

Brass Cocks, Vulcanized Asbestos Packed—Flanged.

Size	1	1¼	1½	2	2½	3	3½	4	5
Each	10.50	12.50	14.50	26.00	38.00	49.00	69.50	90.00	120.00

EXTRA HEAVY.

Size	1	1¼	1½	2	2½	3	3½	4
Each	12.00	15.00	17.00	29.00	42.00	60.00	76.50	93.00

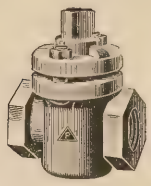
Top Rings for Vulcanized Asbestos Packed Cocks.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	.08	.08	.08	.11	.17	.20	.25	.34	.50	.80	1.04	1.80	2.50	5.00

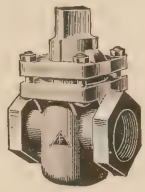
Iron Wrenches for Vulcanized Asbestos Packed Cocks.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	.10	.10	.10	.20	.20	.30	.40	.50	1.00	1.50	1.60	1.75	3.00	3.00

Iron Cocks—Vulcanized Asbestos Packed.



SCREWED ENDS.
Sizes, ⅛ to 2 inch.



SCREWED ENDS.
Sizes, 2½ to 6 inch.

Iron Cocks—Vulcanized, Asbestos Packed, Screwed.

Size	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Each	1.30	1.30	1.45	1.60	2.10	2.50	3.50	4.75	7.00	12.00	18.00	27.00	30.00	45.00	60.00

Heavy Pattern.

Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Each	1.50	1.75	2.00	2.50	3.00	4.25	5.75	8.50	14.50	21.50	32.50	36.00

Extra Heavy Pattern.

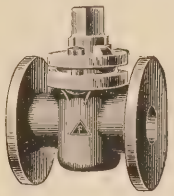
Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Each	2.40	3.00	3.50	5.00	6.75	10.00	17.00	26.00	38.00	42.00

Iron Stop and Waste Cocks.

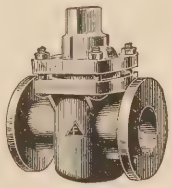
Size	½	¾	1	1¼	1½	2
Each	1.60	2.10	2.50	3.50	4.75	7.00

Iron Cocks—One Flange End, one Screwed End.

Size	1	1¼	1½	2	2½	3	3½	4	5	6
Each	2.50	3.50	4.75	7.00	12.00	18.00	27.00	30.00	45.00	60.00



FLANGED.
Sizes, 1 to 2 inch.



FLANGED.
Sizes, 2½ to 6 inch.

Iron Cocks—Vulcanized, Asbestos Packed, Flanged.

Size	1	1¼	1½	2	2½	3	3½	4	5	6
Each	2.50	3.50	4.75	7.00	12.00	18.00	27.00	30.00	45.00	60.00

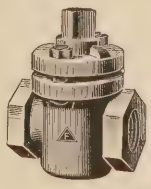
Heavy Pattern.

Size	1	1¼	1½	2	2½	3	3½	4
Each	3.00	4.25	5.75	8.50	14.50	21.50	32.50	36.00

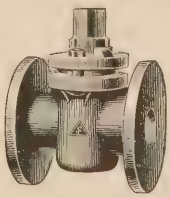
Extra Heavy Pattern.

Size	1	1¼	1½	2	2½	3	3½	4
Each	3.50	5.00	6.75	10.00	17.00	26.00	38.00	42.00

Iron Cocks—Vulcanized, Asbestos Packed for Superheated Steam.



SCREWED.



FLANGED.

Size	1	1¼	1½	2	2½	3
Screwed	3.50	4.75	7.00	12.00	18.00	27.00
Flanged	3.50	4.75	7.00	12.00	18.00	27.00

Iron Angle Cocks.

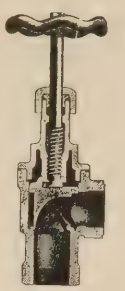
Size	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Screwed or Flanged, each	1.30	1.45	1.60	2.10	2.50	3.50	4.75	7.00	12.00	18.00

Eastwood Blow-Off Valves and Cocks.

A Perfect Blow-Off Valve.



HORIZONTAL, SCREWED PATTERN.



ANGLE, SCREWED PATTERN.

Blow-Off Valves.

Size	¾	1	1¼	1½	2	2½	3
All Bronze, Screwed	4.00	7.00	9.00	11.00	18.00	35.00	47.00
" Flanged	5.25	8.75	11.00	14.25	21.00	40.00	52.00
Iron, Bronze Mounted, Screwed	3.75	4.70	7.00	9.50	16.00	19.50	26.50
" " " Flanged	4.75	6.00	8.00	12.00	19.00	22.50	29.50
" with Yoke, Screwed	----	----	----	----	16.00	19.50	26.50
" " " Flanged	----	----	---	----	19.00	22.50	29.50

In this Cock the elbow shaped disc protects its vital part, as well as the Valve seat. It is easily repaired, and regular pattern is designed for 140 pounds pressure.

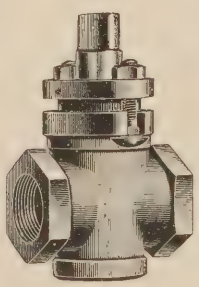
Prices for high pressure pattern quoted on application.

Eastwood Gland Packed and Plug Cocks.

Heavy and Substantial. Well Ground. Long Bearings. Superior New Metal.



GLAND PACKED, SECTION.



GLAND PACKED, PREFERRED PATTERN.

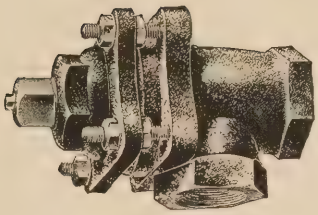


PLUG COCK.

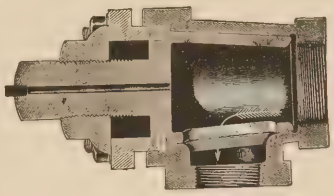
Bronze Cocks.

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Gland Packed, Screwed	3.00	4.00	6.00	8.00	14.00	28.00	45.00	65.00	90.00	----	----
" " Flanged	4.00	7.00	11.00	15.00	23.00	40.00	65.00	90.00	125.00	----	----
Plug " Screwed	1.70	2.35	3.70	4.85	7.30	14.50	22.50	38.50	50.00	----	----
" " Flanged	5.50	7.30	9.70	11.75	18.00	27.50	43.00	62.00	84.00	150.00	275.00

The Shaw Blow-off Cock.



SHAW BLOW-OFF COCK.



SECTION.

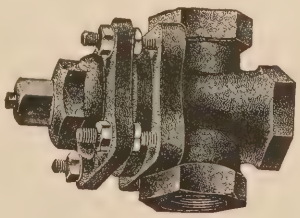
The ordinary form of Blow-off Cock is a constant source of care and attention, it often being necessary to grind in the plug every time after using. The reason for this is obvious. When the Cock is closed, the scale and sediment, in the bottom of the boiler, settles in the blow-off pipe and ultimately lodges against the side of the plug of the Blow-off Cock. Here it remains until the Cock is opened. When the plug is turned, this scale and grit adheres to it and grinds against the body of the Cock, cutting and scratching it in the very place where a perfect fit is of vital importance. As soon as these scratches are worn from inlet to outlet the water flows and then the Cock is worthless.

The Shaw Blow-off Cock was designed for the purpose of overcoming this defect, and that it is a success is attested by its many users. When this Cock is in use the sediment collects on the inside of the hollow plug. Upon opening the Cock it is washed from the interior of the plug into the waste-pipe, and in no case does it come in contact with the ground surfaces of either the plug or body of the Cock. These Cocks are carefully and accurately made. The grinding-in is done by hand and all of the parts are made in duplicate. Between the gland and the plug are fitted two bronze rings, face to face. These rings take up any wear that may occur from turning the plug.

When finished, each Cock is subject to a water pressure of 400 lbs. to the square inch, and while under this pressure the plug is rotated a number of times, thus making sure that the Cock is tight. Should the plug at any time, through disuse, become stuck fast to its seat, it may be loosened in the following manner: First, back the gland away from the plug by means of the nuts underneath it on the studs, then tighten the nut on the plug against the gland. This will draw the plug away from the body of the Cock.

This Cock must in all cases be connected horizontally, as shown in illustration, allowing the steam and sediment to pass directly into the end of the hollow plug.

Size	1¼	1½	2	2½	3
Screwed, each	3.50	4.75	7.00	12.00	18.00
Wrenches, extra	.35	.55	.80	1.00	1.35

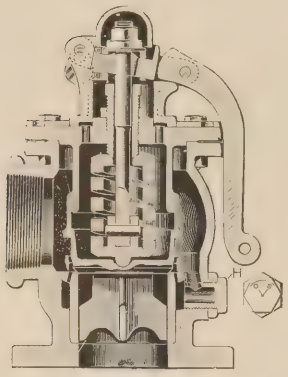


SHAW THREE-WAY BLOW-OFF COCK.

This style of Cock has been introduced to meet the demand for a Combination Cock, Blow-off and Boiler Feed. Must in all cases be connected horizontally, as shown in illustration.

List prices same as above.

Pop Safety Valves.



Style C.
LOCK-UP POP SAFETY VALVE.

Lock-up Pop Safety Valve.

Particularly Adapted for Boilers for Mills, Factories, Electric Light and Power Plants, Pumping Stations, etc.

Bevel seats at angle of 45 degrees and of highest-grade composition steam metal. Nickel seats, extra quality, furnished when desired, and at no extra expense. Pop chamber with knife-edge pop lip, which wears evenly with Valve seat. Encased spring chamber, protecting spring from steam and forming upper guide for Valve. Springs of Jessop's steel wound by hand. Pivoted top and bottom discs for spring, to insure a true bearing on Valve. Screw plug pop regulator to easily regulate pop from outside without taking Valve apart. Movable trip lever, readily changed to stand in any desired position. Lock-up attachment to prevent tampering with adjustment. Working parts of Valve entirely of high-grade composition metal. Advantageous construction of inlet and outlet on base casting, not necessitating removal of outlet pipe to grind in or repair Valve.

To change set pressure unlock padlock and remove lock, pin and lever. Take off cap by unbolting, thus exposing pressure screw. Slack check nut on screw and turn screw downward for increased pressure or upward for less pressure. Afterwards set up check nut.

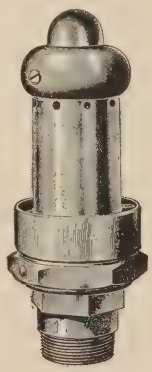
To change pop, or the difference between the opening and closing of the Valve, it is not necessary to take the Valve apart in any way. This can be accomplished by regulating the patent screw plug pop regulator H on the outside back part of the Valve. If more pop is desired, slack the check nut and turn regulator to the left, so that letter S stands nearer perpendicular, or for less pop turn regulator to the right until letter O is nearer perpendicular.

Style C Pop Valves.

Size	2	2½	3	3½	4	4½	5	5½	6
Diameter of Inlet Flange	7	8	9	10	10	12	12	14	14
Price	30.00	40.00	55.00	64.00	70.00	80.00	85.00	105.00	125.00



Style F.
POP VALVE WITHOUT CAP OR LEVER.



Style G.
POP VALVE WITH CAP ONLY.

Pop Safety Valves for Small Stationary and Portable Boilers.

These Valves are made of high-grade composition metal, and the springs of Jessop's steel. They give perfect relief, are solid in construction, and durable.

Style F Valve has patented knife edge pop lip, encased spring, pivoted discs, and open discharge outlet.

Style G Valve is similar, but is furnished with top cap to cover and protect pressure screw.

To change pressure on these Valves, slack check nut and turn pressure screw down for increased pressure or upward for less pressure, then set up check nut. When it is desired to change set pressure more than 15 pounds above or below original set pressure, new springs should be ordered to obtain the greatest efficiency.

Style F and G Pop Valves.

Size	¾	1	1¼	1½	2
Style F	4.50	6.50	8.50	10.00	20.00
Style G	5.00	7.00	9.00	10.50	20.50

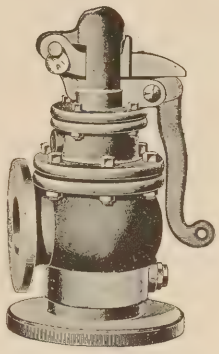
Cam Lever Marine Pop Safety Valve with Lock-up Attachment.



Style O.
YACHT VALVE.

Adopted by the United States Board of Supervising Inspectors of Steam Vessels. Approved and accepted by the United States Navy Department.

The Style O Valve is made of composition metal, finely finished, in sizes from ¾ inch to 2½ inches, inclusive, and is recommended more especially for steam yachts. It has bevel seat, encased spring, cam lever lifting-attachment, and fully complies with the rules and regulations of the United States Board of Supervising Inspectors of Steam Vessels. The Valve has pipe outlet, so that the steam discharge may be carried outside boiler room.



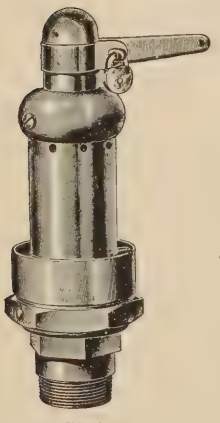
Style P.
MARINE VALVE.

The Style P Valve is especially adapted for marine service on steamships, tow boats, steam yachts, etc., and is the standard Valve on many of the large steamship lines. It is in use on several of the latest United States battle ships, cruisers, and gunboats, having been accepted by the Chief Engineer of the United States Navy.

Style O and P Cam Lever Marine Pop Safety Valves.

Size	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	5½	6
Inlet Flange, inches	----	----	----	----	----	8	9	10	10	12	12	14	14
Outlet " "	----	----	----	----	----	7	7½	8	8½	9	9½	10	10½
Style O Composition Valve	7.20	9.60	12.00	14.40	25.00	40.00	----	----	----	----	----	----	----
" P Iron Valve	----	----	----	----	----	48.00	66.00	75.00	84.00	95.00	102.00	125.00	150.00

Unless otherwise stated, all marine Valves above 2-inch size are made with flanged inlet and outlet.
Testing clamps furnished at no extra expense.
Always state highest pressure carried, as every Valve is tested and set before leaving our factory.
"Nickel Seated" Valves at prices same as above.



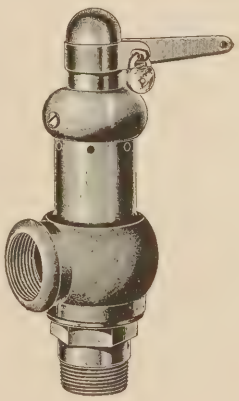
Style H.
WITH LOCK-UP LEVER AND OPEN DISCHARGE.

Lock-up Pop Safety Valves for Small Stationary and Portable Boilers.

These Valves are recommended for small-size stationary or portable boilers. They are made throughout of the best composition metal, with the exception of the springs, which are of Jessop's steel; automatic in relief, durable and efficient.

Style H Valve has lock-up attachment, trip lever, patented knife-edge pop lip, encased spring, pivoted disks, and open discharge outlet.

Style I Valve is the same as the Style H Valve, but with the additional improvement of having pipe outlet.

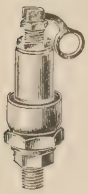


Style I.
WITH LOCK-UP LEVER AND PIPE OUTLET.

Style H and I Pop Safety Valves.

Size	¾	1	1¼	1½	2
Style H Valve	6.00	8.00	10.00	12.00	22.00
" I "	7.00	9.00	11.00	14.00	25.00

Pop Safety Valves.



Style CA
With Open Discharge.

These Valves are made of best steam metal and fitted with springs of Jessop steel. Each Valve is carefully tested and set to work at the pressure desired, which should always be specified in ordering.

Specially adapted for Steam Vehicles.

For any pressure up to 400 pounds.

Style CA and CB Pop Safety Valves.

Size	1/8	1/4	3/8	1/2
Each	4.50	4.50	5.00	5.00

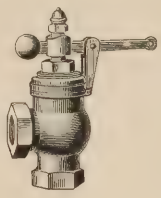


Style CB.
With Pipe Outlet.

Low Pressure Pop Safety Valves—Specially Adapted for Steam Heating Boilers.



Style EJ.



Style EF.

These Valves were specially designed for steam heating boilers, where low pressures are carried; they are compact, self-contained, and made of best composition metal. The Valve seats are made with bevel seats, at an angle of 45 degrees U. S. Government Standard.

An important feature in the Style EF Lever Valve is that the Valve stem acts independent of lever. By pulling down lever attachment the Valve as well as spring is lifted from seat.

Discharge outlet can be piped to outside of building, avoiding the annoying blowing off of steam in cellar.

Low Pressure Pop Safety Valves.

Size	3/4	1	1 1/4	1 1/2	2
Style EJ	2.60	3.30	4.50	6.35	8.65
" EF	5.00	7.00	9.00	11.00	18.00

Always state pressure at which Valve is to be set.

Snifting or Cylinder Relief Valves.



Style R.



Style J.

These Valves are used on cylinders, condensers, or in any place where a quick working Relief Valve is needed. They are made of composition metal with pipe outlet.

As shown in Style R, these Valves are quite commonly made with extra side pipe connection (above 3/4 inch) on bottom part for indicator attachment. This is not furnished, however, unless specified. State highest working pressure in ordering.

Style R and J Snifting or Cylinder Relief Valves.

Size	3/4	1	1 1/4	1 1/2	2	2 1/2
Each	7.00	9.00	12.50	16.50	23.00	40.00

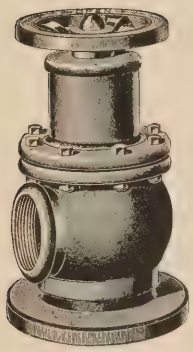
Style R and J—Small Sizes.

Size	1/8	1/4	3/8	1/2
Each	5.00	5.00	5.50	5.50

These Valves in sizes 1/8 to 1/2 inch, inclusive, are made only with square-head adjusting screw, without cap or wheel.

Water Relief Valves.

Standard Underwriter Pattern.



Style V.
WATER RELIEF VALVE.

For Fire Pumps, Hydraulic Elevators, Water Works, Pumping Stations and Stand Pipes, and wherever an Automatic Relief Valve is wanted to prevent a water hammer or over pressure of water. These Valves are largely used in mills in connection with the fire pump, and will positively prevent bursting of hose or pipe.

Our Style V Valve is termed the Underwriters' Pattern, having been competitively tested and accepted by the Associated Factory Insurance Companies, and given first mention in their Underwriters' Pump Specifications. Greatest efficiency and durability, combined with ease of adjustment, are the main points that have brought this Valve into such extensive use.

This Valve is made of a large pattern, with extra long spring, giving large relief. It is furnished with large wheel-top for easy adjustment. The working parts are of high-grade composition metal, to prevent corrosion ; the spring, of Jessop's steel.



Style X.
WATER RELIEF VALVE.

The Style X Valve is adapted for service similar to which the Style V Valve is applied, only on a smaller scale. It is made in sizes from ¾ inch to 3 inches, inclusive, and is entirely of composition metal, finely finished ; the spring, of Jessop's steel.

ADJUSTMENT OF WATER RELIEF VALVES.—To increase pressure of Style V Iron Water Relief Valve, turn wheel from right to left. For Style X Composition Valve, turn from left to right.

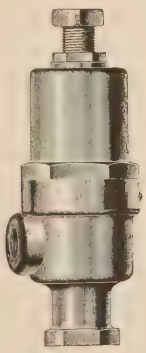
In ordering, always state pressure at which Valve is to relieve.

Style X and V Water Relief Valves.

Size	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Style V Iron Valve	----	----	----	30.00	40.00	60.00	75.00	80.00	85.00	105.00	125.00	150.00
Style X Comp. Valve	7.00	9.00	12.50	16.50	23.00	40.00	65.00	--	----	----	----	----
Inlet Flange, in	----	----	----	----	----	8	9	10	10	12	12	14

Style V Iron Valve can be furnished in sizes 1½ and 2 inch with screwed or flanged base.

Hydraulic Relief Valve for Extreme High-Pressure Service.



Style Y.
HYDRAULIC RELIEF VALVE.

Our Hydraulic Valves are made in all sizes, to suit any pressure, and are extensively used on Hydraulic Presses and Pumps, or wherever an automatic high-pressure relief is required. They are solidly constructed, of material of great tensile strength, and so made that they can be taken apart to grind in the seat, without breaking inlet or outlet connections.

In sizes up to and including three inches, they are usually made of high-grade composition metal, with springs of Jessop's steel.

In ordering, always state pressure at which Valve is to relieve.

For Duty 1000 to 2000 Pounds.

Size	¾	1	1¼	1½	2
Each	28.00	42.00	61.00	83.50	111.00

Larger sizes on application.

Chronometer Pump Governing Valves.

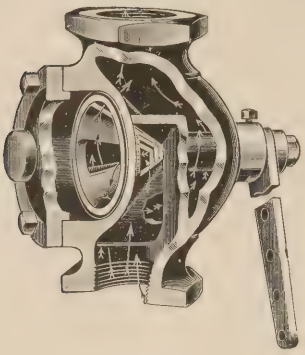


Fig. 1.

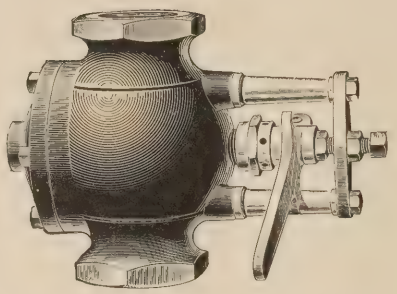


Fig. 2.

This design of valve we have used very successfully on steam pumps to throttle the steam pressure. The valve and valve seat are turned on an angle of 45 degrees with the stem of the valve, and is ground steam tight when finished. This form of seat has an advantage of requiring no packing around the stem, and, by its form and construction, is not affected by the expansion or contraction of the metal.

Figure 1 is shown simply to convey a clear idea of the interior construction of the valve.

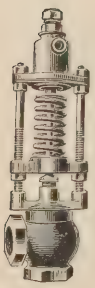
Figure 2 shows the valve with a yoke, which forms a bearing for the outer end of the stem and relieves it from excessive friction, at the same time rendering it adjustable to such amount of friction on the seat as may be necessary. When an accumulator is used in connection with the pump, we attach the automatic trips to the lever of the valve, thus automatically starting and stopping the pump.

Chronometer Valves.

Size	⅜	½	¾	1	1¼	1½	2	2½	3	4	6
Iron Body	----	----	5.50	8.00	11.00	15.00	20.00	25.00	35.00	60.00	120.00
Bronze Body	----	---	7.00	10.00	14.00	20.00	28.00	37.00	55.00	----	----
Iron Body, with Yoke	----	----	----	----	15.00	20.00	25.00	33.00	45.00	75.00	150.00
Bronze Body, " "	9.00	9.00	10.00	13.00	18.00	25.00	33.00	45.00	65.00	----	----

Ford Pump Regulator.

This Regulator works equally as well when open or closed tanks are used. They are simple in construction, and can be put in place by any plumber or pipe fitter, and are readily understood by practical engineers.



FORD PUMP REGULATOR.

How to Connect and Operate.—Place the Regulator in an upright position between the steam chest and throttle valve, then connect the steam pipe to the side inlet. The oil-cup should be placed in such a position as to allow the oil to pass through the Regulator. For connecting the water part with closed tank (as with elevator pressure systems or fire pumps) tap the pressure tank for ⅜ pipe, and connect the side of operating cylinder (marked inlet). Place a union and globe valve near the Regulator. A drip pipe should be connected with the bottom of the cylinder.

To remove the valve cap, strike the lugs lightly with a hammer.

In starting pump, do it with throttle valve in steam pipe, then open the globe valve in pressure pipe from tank to Regulator, and screw up the nuts on side rods under the spring rest until the required pressure is obtained.

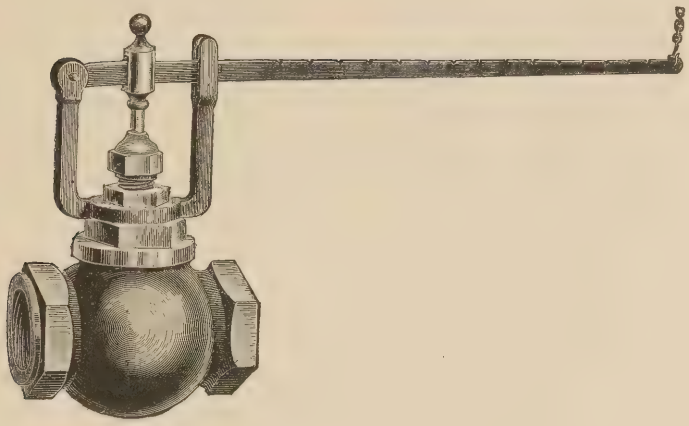
When used for open tanks connect a float valve to the end of discharge pipe in the tank on the roof; then from the operating cylinder connect a ⅜ pipe to the pump discharge pipe with a valve and union.

To Keep the Regulator Clean.—To clean out operating cylinder unscrew the two nuts from top end of the side rods, open union in pipe work; the piston head and cylinder can then be taken off and cleaned or re-packed. This should be done every three or four months.

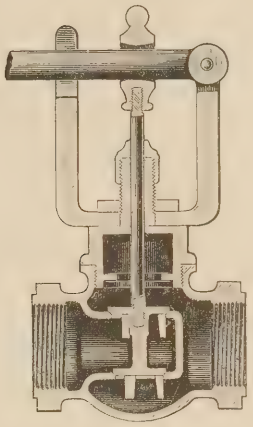
Do Not Use Wick Packing.—We can send you leather cups and garlock packing which will be found more satisfactory. Pack the valve rod as lightly as possible and screw down on the stuffing box nut with thumb and finger, just enough to hold the steam.

Size	1	1½	2	2½	3	4
Each	20.00	25.00	30.00	35.00	40.00	50.00

The Nason Quick Opening Valve with Balanced Discs.



QUICK OPENING VALVE.



SECTION.

The Nason Quick Opening Valve with Balanced Discs.

In construction, a Balanced Valve with bevel disc seats, differing slightly in diameter, which permits the passage of the lower disc through the upper opening. Compensation for the difference in areas is provided for by a lever, to which a suitable weight may be attached.

A standard service in which this Valve is employed is the automatic controlling of pumping engines in elevator and tank systems.

Connected in the line of steam supply to the pump to be regulated, they are operated by a float placed in the tank—the variation in the water level opening and closing the Valve and starting and stopping the pump, as required.

These Valves are also widely used in connection with temperature controlling devices, water motors, etc., and are recommended for any service where an extremely sensitive and positive action is imperative.

They can be furnished with or without yoke, with spindle plain at top; but unless otherwise specified, the Valves are shipped with yoke and lever. Owing to the varying requirements of different services, weights are not included unless called for, and are then an extra charge.

The yoke has a swivel action which enables it to be placed in alignment with any device to which it may be attached.

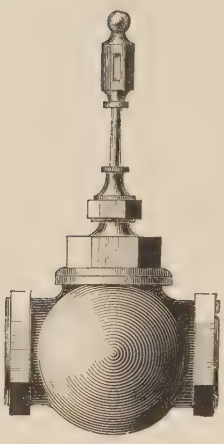
More than ordinary care is used in the manufacture of these Valves, and the moving parts are so perfectly balanced that but little force is necessary to open or close them—irrespective of the steam pressure imposed upon them.

The Nason "Quick Opening" Valve was one of the first of this type placed upon the market; there are many thousands of them now in use, and by constantly adding to and perfecting our manufacturing equipment we have been able to maintain our high standard, and the Valve as now made is offered as the nearest approach to mechanical perfection and reliability possible to attain.

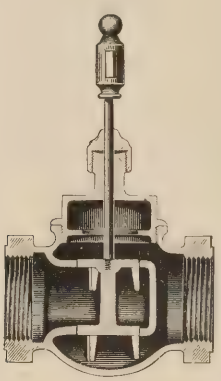
These Valves are made in all sizes of steam metal composition, and the 3½ and 4 inch sizes can also be furnished with iron bodies and composition mountings.

Size	¾	1	1¼	1½	2	2½	3	3½	4
Steam Metal, each	5.50	5.80	7.50	9.50	14.00	18.50	30.50	53.50	70.00
Iron Body, "	----	----	----	----	----	----	----	37.00	47.00

The Nason Balanced Governor Valve.



BALANCED GOVERNOR VALVE.



SECTION.

The Nason Balanced Governor Valve.

A double Piston Valve in which the openings are identical in diameter, and being balanced at all points of its stroke, requires no compensating weight, and is therefore furnished with plain spindle, and without yoke or lever, as shown in illustration.

Designed primarily for use in connection with steam engine governors, they are also adapted for any automatic regulating device or appliance where a quick opening balanced Valve is required which is absolutely balanced and moves with a minimum of friction. In the manufacture of this Valve the double pistons are ground into their respective ports with extreme care, to obviate to the greatest possible extent the liability of leakage due to contraction and expansion under steam pressure.

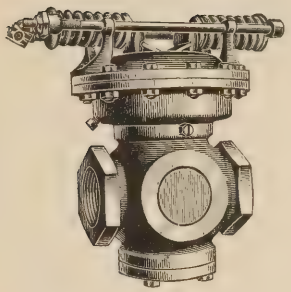
Before leaving our factory every Valve is tested under 80 pounds steam pressure and is tight under this duty when it leaves our hands ; but like all Valves of this type with piston, instead of disc seats, it is best adapted for service where a slight leakage is not objectionable, and it is preferably used with steam, or liquids free from gritty substances liable to abrade the piston surfaces.

This Valve has been manufactured by us for many years, and we can recommend it unhesitatingly as the most reliable of its type now offered.

All sizes can be furnished in a special steam metal composition, and the 3½ and 4 inch sizes can also be furnished with iron bodies and composition mountings.

Size	¾	1	1¼	1½	2	2½	3	3½	4
Steam Metal, each	5.50	5.80	7.50	9.50	14.00	18.50	30.50	53.50	70.00
Iron Body, "								37.00	47.00

Foster Pressure Regulators and Strainers.



"CLASS W."

The Foster "Class W" Pressure Regulator.

LEADING FEATURES:

1. A compensating spring movement, exerting an unvarying power on the diaphragm. 2. Full steam-way through the valve. 3. Utmost simplicity of construction. 4. No friction of parts. 5. No small parts to clog. 6. No dash-pot. 7. Noiseless—no chattering. 8. Absolutely automatic in operation after adjustment as to pressures.

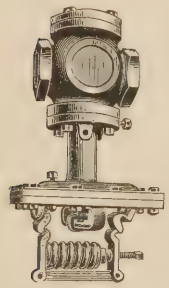
"Class W" Valve.

Size. Inches.	Screwed Ends.	Flanged Ends.	Diam. of Flanges.	Distance between Faces.	Approximate Weights. Iron Bodies. Screwed.	Iron Bodies. Flanged.	Composition. Screwed.	Composition. Flanged
½	$18	----	----	----	----	----	4½	----
¾	20	$22	3¾	4½	----	----	12½	17
1	22	24	4¼	5¾	----	----	13	17
1¼	28	30	5	5½	22	26	23	27
1½	35	37	5⅜	6	26	31	28	35
2	44	46	6	7	48	57	50	59
2½	57	60	7	9	70	83	76	87
3	72	75	7½	10	78	88	82	96
3½	90	95	8½	11	92	106	98	112
4	100	105	9	12	145	165	160	180
4½	120	125	9¼	14	156	170	----	185
5	135	140	10	15	180	195	----	215
6	180	185	11	17	260	280	----	324
7	----	220	12½	18¼	----	410	----	480
8	----	260	13½	20¾	----	480	----	540
10	----	350	16	23½	----	575	----	650
12	----	450	19	27¼	----	1050	----	----
13	----	----	----	----	----	----	----	1156
14	----	575	21½	31	----	1450	----	----
16	----	700	23½	35	----	1600	----	----
18	----	875	25	37½	----	1900	----	----
20	----	1150	27½	48½	----	3100	----	----

NOTE.—Dimensions given are standard. Flanges of different size or distance between faces made to order only at additional price. Drilling flanges extra. Companion flanges bolted to Regulators at reasonable prices.

Special valves or bodies made of Naval Bronze (Government formula) to order only at an extra price per pound net weight, equal to twice the current price of Lake copper.

In ordering state initial and delivery pressures, also service. In the absence of this information, all Regulators will be provided with a spring to deliver pressures between 10 and 60 lbs.



"CLASS Q."

The Foster "Class Q" Pressure Regulator.

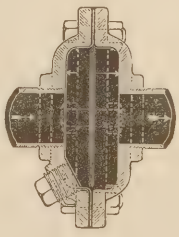
DESIGNED FOR LOW PRESSURES, NOT EXCEEDING 15 LBS. DELIVERY, AS IN STEAM HEATING, ETC.

"Class Q" Valve.

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12
Screwed	18.50	20	24	28	35	40	48	55	70	85	120	--	--	--
Flanged	--	--	--	--	38	43	52	60	75	90	125	200	300	350

NOTE.—A Strainer should always be applied to Valves required for low pressure service, such as steam heating, etc.

Strainers for Foster "Class W" and "Class Q" Valves.



FOR SCREWED ENDS.

A Strainer has been found desirable in nearly all cases—in many cases absolutely necessary—to prevent scale, grit, cuttings, etc., from lodging on the Valve seats. The Strainer should be applied on the inlet side of the Valve. Its use remedies many supposed defects in valves, which are really chargeable to the piping.

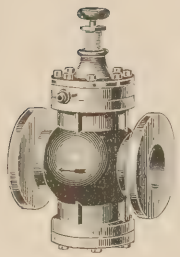
Cut shows Strainer for screwed ends. For flanged ends the construction is slightly different. Prices quoted are for cast-iron strainers.

Price List of Strainers.

Size	½	¾ or 1	1¼, 1½	2	2½, 3	4	5	6	7	8	10
Price, Screwed	2.00	3.00	4.00	5.00	6.00	9.00	10.00	12.00	----	----	----
Flanged, including attaching to Regulator	----	----	----	7.50	9.50	12.50	14.00	16.50	20.00	21.00	25.00

Pressure Reducing and Regulating Valves.

The Improved Steam Pressure Regulator.



IMPROVED REDUCING VALVE

This Regulator is suitable for any boiler pressure, and will deliver accurately and uniformly any lower pressure from one to within a few pounds of the initial pressure.

It is used on steam-heating apparatus, slashers, jacket kettles, air and water pumps; on steamships for deck machinery, pumps, supplying steam to engines at lower than boiler pressure, or in any place where it is desired to reduce from a high pressure to a lower pressure. In pulp and paper mills, on digesters and on the dryers, it is highly recommended and can be used in connection with exhaust steam, and we can guarantee perfect work and scientific drying of all grades of papers.

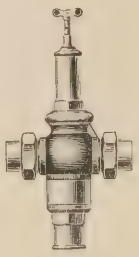
Size	1	1¼	1½	2	2½	3	4	5	6	7	8
Each	$22	28	35	44	57	72	100	135	180	210	250

Sizes to 2 inch, screwed; larger, flanged.

The Mason Reducing Valve.

This Valve is designed to reduce and maintain an even steam or air pressure, regardless of the initial pressure. It will automatically reduce boiler pressure for steam-heating coils, dry-rooms, paper-making machinery, slashers, dry-kettles, and all places where it is desirable to use lower pressure than that of the boiler. The dashpot, which immediately fills with condensation, prevents all chattering or pounding, and requires no attention. The sizes, up to and including 2-inch, are made of the best composition, and above that, of cast iron with composition linings. The area of the passage from the high to the low pressure side of the Valve is equal, when open, to the full area of the pipe, so that a low pressure of the system, almost equal to the initial high pressure, may be carried.

To increase pressure, turn the key in the direction taken by the hands of a watch.



MASON REDUCING VALVE.

Size	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
Each	$18	18	22	28	35	44	57	72	85	100	135	180	250	350

The Curtis Regulator for Steam and Air.



CURTIS REDUCING VALVE.

For universal application to all the varied and various conditions under which a reduced pressure of steam, air or other fluids is required. It is compact and self contained, without levers, weights or projections. It has no drip or leak of steam and water. All that passes into it passes through it, without waste or loss.

It has no glands or packing; and the seat may be made of any suitable material for steam, air or any other gas or fluid.

It is used on steam-heating apparatus, dryers, slashers, jacket kettles of all kinds, air and water pumps, etc., and, in fact, everywhere that steam or air is to be controlled automatically.

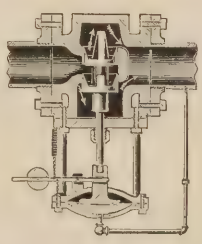
Size	½	¾	1	1¼	1½	2	2½	3	4	5	6	7	8
Each	$22	22	22	28	35	44	57	72	100	135	180	225	275

Special quotations for larger sizes.

Lock-up attachment, 5.00 extra.

The Acton High Pressure Reducing Valve.

This Valve is controlled by a lever and adjustable weight. The position of the weight on the lever admits of quick change in its regulation when desired. When necessary, the Valve can be given a full opening by closing the valve in the diaphragm connecting pipe, which is furnished with each machine. This Valve is suitable for boiler pressure up to 200 lbs., and a delivery from 75 lbs. down to 1 lb. For pressures exceeding 200 lbs. Valves will be quoted on application.



ACTON HIGH PRESSURE REDUCING VALVE.

Size	¾	1	1¼	1½	2	2½	3	3½	4	4½	5
Each	$20	22	28	35	44	57	72	86	100	117	135

Size	6	7	8	9	10	12	14	16	18	20	24
Each	$180	215	250	300	350	450	550	650	800	950	1200

Pressure Regulating Valves.



EUREKA LOW PRESSURE REGULATING VALVE.

Eureka Low Pressure Regulating Valve

For reducing steam, air or gas pressures from the initial or high pressure carried, which may be as high as 125 pounds per square inch, down to any pressure on the reduced side less than 15 pounds, and from this point down to as low as 1 pound.

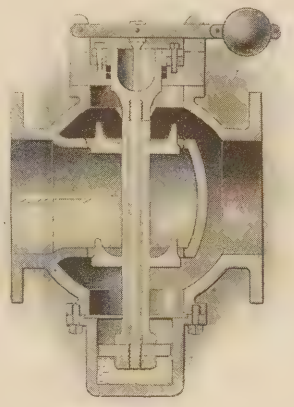
The illustration shows a complete Valve and the position when installed.

The sectional illustration clearly shows the simplicity of construction of this Valve. It will be noted that we employ no springs, dash pots, auxiliary valves, drip pipes, nor are there numerous small parts to maintain and keep in order.

Eureka High Pressure Regulating Valve

For reducing steam or air pressure from the initial or high pressure carried, which may be as high as 125 pounds per square inch, down to any pressure on the reduced side above 15 pounds, that may be desired.

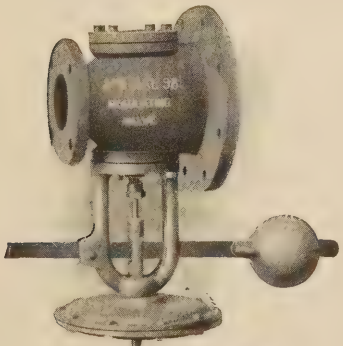
From the sectional illustration it will be clearly seen that a highly desirable feature of this Valve is that the actuating pressure is obtained from the reduced side. By this construction, wide variations of pressure may take place on the boiler or high pressure side, and at the same time a fixed pressure may be maintained at any point lower than the initial, that may be desired on the low pressure side.



EUREKA HIGH PRESSURE REGULATING VALVE.

Eureka Pressure Regulators

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	9	10	12
Face to Face, L. P.	4½	4½	4¾	4¾	6	7½	8½	9½	10⅜	11¾	12¾	13¼	14½	16½	16½	18½
" " H. P.	4½	4½	4½	4½	6¼	7½	8½	9½	10½	11¾	12¾	13¾	14½	16½	16½	18½
Each	$20	22	28	35	44	57	72	85	100	135	180	225	275	350	350	470



VACUUM PRESSURE REGULATING VALVE.

Vacuum Pressure Regulating Valve

For reducing steam pressures, for heating purposes only, from that carried on boilers or steam heating mains down to a point of atmospheric pressure or below if desirable.

In modern atmospheric, vacuum or very low pressure systems of steam heating are demanded, to insure satisfactory results, Pressure Regulating Valves constructed especially to meet their most exacting requirements as to sensitiveness in promptly responding to the slightest fluctuation in pressure and prove capable of preserving the steam economies which are the predominant features of these systems.

This Valve is constructed with an independent diaphragm, and to which is connected the actuating pressure. The pressure to govern the operation of Valve is taken from the low pressure heating main some distance from the Valve itself.

Size	1 x 2	1¼ x 2½	1½ x 3	2 x 4	2½ x 5
Face to Face	6	6½	6½	6½	7¾
Each	33.00	42.50	53.50	72.00	96.00
Size	**3 x 6**	**4 x 8**	**5 x 10**	**6 x 12**	**8 x 14**
Face to Face	8½	11	12	13	14¾
Each	126.00	187.50	242.00	325.00	400.00

Sizes 1 x 2 to 2 x 4 inches, inclusive, made with small end screwed only and large end flanged; all larger have both ends flanged.

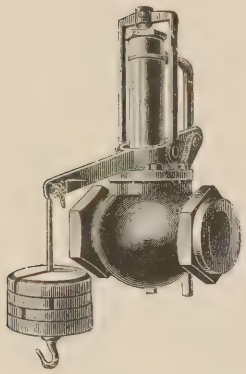
Companion flanges are always extra and only furnished with Valves when so ordered.

We construct to order Valves of larger sizes, for higher initial pressures or to meet special conditions.

In ordering it is especially important to state clearly the pressures desired to be reduced from and to what, and the system to be used on.

Davis Pressure Regulators.

No. 1. Pressure Regulator.



No. 1.
PRESSURE REGULATOR.

This style is designed for all places where there is no pulsation of pressure, suitable for steam heating, boiling, drying, distilling, and all places requiring a constant, unvarying pressure below that of boiler.

In ordering, state purpose for which valve is to be used, also pressure to be carried.

This style sent unless otherwise ordered.

Size, inches	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	10	12	15
Dia. of flanges, in.	--	--	--	--	6½	7	8	8	9	10	12	13	15	18	20	22
Each	$20	22	24	25	30	35	40	50	60	75	100	135	175	275	400	550

¾ to 1½-inch inclusive, screw end; 2, 2½, 3, 4, 5 and 6 inch, either flanged or screw end. 7 to 15 inch flanged end.

For very low pressure such as Vacuum System of steam heating, order valve No. 3.

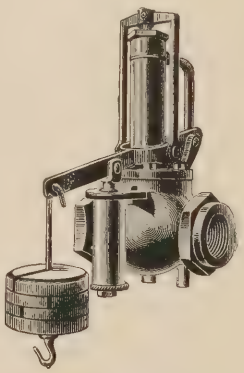
No. 2. Pressure Regulator.

For Large Power Plants, Electric Light Stations, Etc.

This style Regulator is the same as No. 1 with the addition of oil-cylinder (dash-pot) which will prevent jumping or chattering under all conditions and is to be used where there is a pulsation or vibration of pressure, such as would be found in the steam pipe of a pump or engine, caused by the opening and closing of the valves; in steam heating system, caused by exhaust from engines, pumps, steam elevators, etc.

On steam pumps it will maintain a uniform pressure of delivery, regardless of speed or volume, by being placed in the steam pipe.

In ordering state purpose for which valve is to be used.



No. 2.
PRESSURE REGULATOR.

Size, inches	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	10	12	15
Dia. of flanges, in.	--	--	--	--	6½	7	8	8	9	10	12	13	15	18	20	22
Each	$25	27	29	30	36	42	48	58	70	90	120	160	200	300	435	600

¾ to 1½ inch inclusive, screw end; 2, 2½, 3, 4, 5 and 6 inch, either flanged or screw end. 7 to 15 inch flanged end.

For very low pressure, such as Vacuum System of steam heating, order valve No. 3.

No. 3. Pressure Regulator.

(Not Illustrated.)

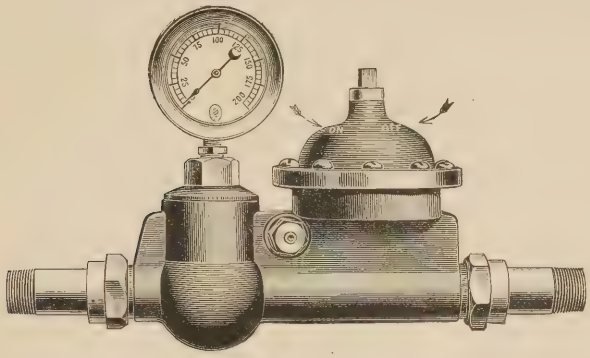
This style of Regulator is especially designed for reducing to extremely low pressure, such as is employed in heating and cooking. Having an increased outlet to allow for the quick expansion of the steam passing through the valve seats from a high initial pressure, and being so perfectly balanced enables it to reduce an initial pressure from any point to atmospheric pressure or below, and is designed to fulfill the requirements of the Paul or Williams system of heating.

The Regulator is used to deliver live steam from the boilers, when the exhaust steam is insufficient to give the required temperature. By taking from or adding to, weights, the adjustment of this valve can be altered to give any delivery pressure required.

Size, inches	1½ x 3	2 x 4	2½ x 5	3 x 6	4 x 8	5 x 10	6 x 12	8 x 14
Diameter of flanges, inches	--	--	5 x 10	6 x 11	4 x 9 8 x 14	5 x 10 10 x 17	6 x 11 12 x 19	8 x 14 14 x 20
Each	$40	50	65	85	135	195	280	360

1½ x 3 and 2 x 4 screw end; 2½ x 5 and 3 x 6 screw on the inlet end and flanged on the outlet—4 x 8 to 8 x 14 inches inclusive, flanged end.

The Nason "Griffin" Water Pressure Regulator.



¾-Inch Size.

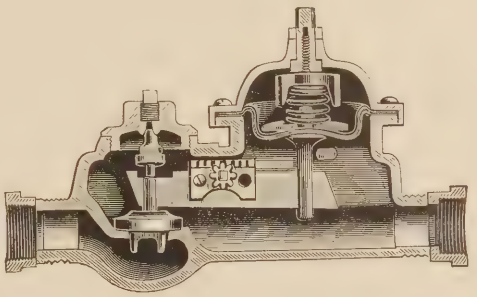
In the Improved "Griffin" Water Pressure Reducing and Regulating Valve we offer a device which we can thoroughly recommend for its extreme simplicity of construction, durability and safety.

The valve is designed for service of the most exacting description; it is made throughout of the best material and workmanship and is rigidly tested under varying conditions before leaving the factory.

The valve is frictionless in all its parts; there are no packed joints, hence it cannot "stick" at any point, open or closed. Its use prevents the annoying water hammer in house systems, and in the event of pressure being turned off the street mains, or the bursting of the latter, the valve closes automatically and prevents the collapse of boilers.

Where water is passed through a meter under high pressure the use of this Regulator will save its cost in a short time; it removes the strain from the entire house system; prevents leaky joints and faucets; obviates the unpleasant noise in the closet cisterns and the disagreeable spattering of water in sinks, etc.

In operation our Regulator is extremely simple. The higher pressure entering valve at "inlet" immediately fills the valve chamber and establishes an equilibrium between the areas of the diaphragm and valve seat, at such point as the fulcrum may be set, thus permitting an uninterrupted flow of water through the valve of the full area of the connecting pipes, without noise or "chatter."



Sectional View. ¾-Inch Size.

Immediately the faucets are shut and the system closed, the pressure acting upon the larger area of the diaphragm overcomes the resistance of the higher pressure at valve inlet, seats the valve, and permits only the reduced pressure to bear upon the house pipes and boiler.

It will therefore be seen that the water pressure is reduced by a simple scientific principle, and not "throttled" or reduced through friction, as is common in many of the cheaper types of pressure regulators, at the expense of a restricted water supply and other aggravating annoyances.

With this device the highest main pressures may be reduced and delivered directly into the house system, but as an additional safeguard to take care of the expansion of water in the boiler due to overheating, the installation of a range boiler Safety Valve is recommended.

The larger sizes when used in gravity pipe lines can be equipped with an automatic arrangement for turning on the full pressure, for fire purposes, at any point or distance from the valve which may be desired.

Threaded solder nipples and unions are furnished at both ends of small sizes for iron or lead pipe. They are made all of brass below 1½ inch. Sizes 1½ inch and above are made of iron with brass seats, and flange or hub ends.

Griffin Water Pressure Regulators.

Size	¾	1	1½	2	3	4	6	8	12	14	16	20
Each	$15	20	30	45	75	100	175	250	350	500	700	1000

Pressure Gauge 1.25 Net, Extra.

Water Pressure Regulating Valves.



MUELLER REGULATOR.

The Mueller Water Pressure Regulator.

All Regulators to 1¼ inch are provided with a relief valve to relieve the expansion of hot water and prevent the creating of pressure in the house pipes, so that at no time will there be a higher pressure than that at which the Regulator is set.

Size	½	¾	1	1¼	1½	2	2½
For Iron Pipe	10.00	10.00	13.00	17.50	24.00	40.00	55.00
" Lead Pipe	10.50	10.50	13.70	----	----	----	----

Flange or Hub Ends.

Size	3	4	6	8	10	12	14	16	18	20
Each	70.00	90.00	150.00	225.00	300.00	400.00	600.00	750.00	950.00	1000

The Curtis Water Pressure Regulator.

This Regulator is warranted to maintain the pressure desired, with perfect uniformity, regardless of any and all fluctuations in the outside pressure.

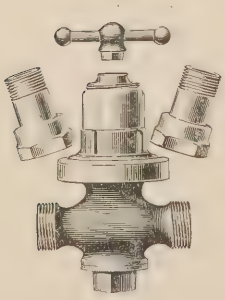
Every part of the Regulator which comes in contact with the water (except the diaphragm) is made of best composition, so that trouble with rust or clogging with sediment is entirely avoided. The material and workmanship cannot be excelled, our aim being to produce a machine unapproachable in point of excellence, and practically imperishable in all its working parts, at the lowest price consistent with such quality and excellence.



CURTIS REGULATOR.

Size	¾	1	1¼	1½	2	2½	3	4
Each	17.00	22.00	28.00	35.00	44.00	57.00	72.00	100.00

The Ross Water Pressure Regulator.



ROSS REGULATOR.
Size ¾ to 2 inch.

Their operation may be described as follows: Fluid being admitted from pipes having a high pressure will pass freely through valve, which is held open by the compression or tension on loading spring until the pressure in pipes on outlet side is sufficient to overcome tension of loading spring. Low pressure is admitted from outlet side of valve through the stem, and operates below the movable piston or flexible diaphragm; the valve gradually opening or closing with any slight rise or fall of pressure on the outlet side. Variation of pressure in supply pipe has no influence on valve, as two equal areas are exposed to the pressure on high pressure side.

Valves may be placed in any position. The inlet is plainly marked; an arrow also indicates the flow. Pipes should be well blown out before attaching the valve. Avoid the use of red lead. To increase the pressure, turn hand wheel down or in; to decrease the pressure, turn hand wheel back or out.

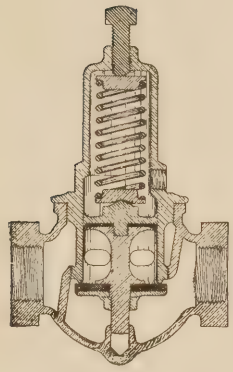
In ordering state size of valve, inlet pressure and delivery required.

When water pressure regulator is used in connection with water back or boiler, a relief valve should be used to prevent increase of pressure by expansion.

Size	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12	14	16
Each	7.00	10.00	14.00	20.00	24.00	45.00	60.00	85.00	100.00	150.00	225.00	275.00	400.00	600.00	750.00

Sizes ¾ to 2 inches are made Screwed Top with Couplings.
Sizes 2 to 6 inches are made with Bolted Top, Screw Socket or Flange Ends.

The Ford Water Pressure Reducing Valve.



FORD WATER PRESSURE REGULATOR.

This Valve is recommended as one of the most simple and effective water regulators now on the market. It is extremely sensitive in operation and maintains a uniform pressure regardless of the variation in the initial. It will reduce the pressure in any distributing system and is especially designed for high buildings where it is necessary to carry the same pressure on each floor.

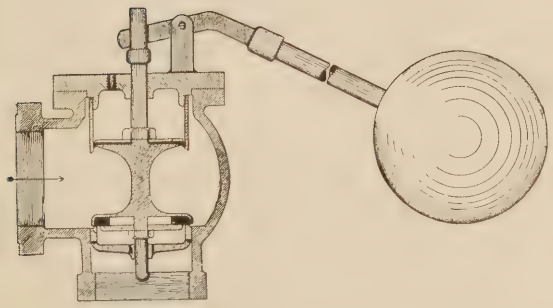
In sizes ¾ to 2½ inch this regulator is made of brass. It is easily adjusted for any pressure, and is automatic in action.

It occupies no more space than an ordinary globe valve. An adjusting screw is placed in the top of the spring case to regulate the desired pressure. Especially desirable for low pressure heating apparatus where the boilers are supplied from high pressure mains.

Size	¾	1	1¼	1½	2	2½	3	4	5
Each	18.00	20.00	22.00	25.00	30.00	35.00	40.00	50.00	60.00

In ordering state whether initial pressure is taken from street main or roof-tank; if for hot or cold water; also the required pressure.

Balanced Tank Valve.



BALANCED TANK VALVE.

This Valve is designed to operate on high or low pressure. It is simple in construction and is indispensable in cases where the tank is supplied by a large feed pipe.

As the Valve is balanced and closes in the direction of the water current it will be seen that a small float will operate it, which obviates the danger of breakage in the float lever, so common in ordinary tank valves.

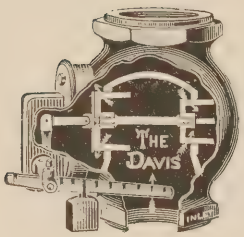
Made of brass in sizes 1 to 3 inch; the 4 inch is iron body, with brass trimmings,

The Valve is connected to the end of delivery pipe, with inlet on side, and a "hush pipe" is taken from valve outlet to about two feet from highest water line in tank. The valve is then ready to operate on high or low pressure, no adjustment being necessary.

Size	1	1½	2	2½	3	4
Each, including Float	10.00	15.00	20.00	25.00	35.00	50.00

5 and 6 inch Balanced Valves will be quoted on application.

The Davis Noiseless Back Pressure Valve.



DAVIS NOISELESS BACK PRESSURE VALVE.

To attain the best economy in modern steam engineering a good Back Pressure Valve is as essential as a good reducing Valve and shares equal in importance to it in the most economical application and utilization of steam and the greatest care should be observed in its selection. Since the Davis Back Pressure Valve came out modern engineers have favored its use when sensitiveness, accuracy and reliableness are considered and not only first cost. The common use of our Valve is in connection with the modern vacuum, atmospheric and very low pressure steam heating systems. Particular attention is paid to providing a sensitive and closely adjusted Valve for a vacuum heating system where a Valve is required to operate upon an ounce variation.

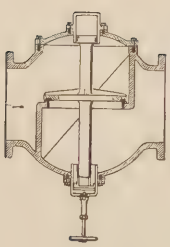
The Valve is made strong and durable, capable of standing a full pressure of one hundred pounds. The cover is detachable and by removing same, the internal Valve comes out.

It will operate in five distinct positions, but we would recommend that it be used wherever possible in a horizontal position with the cover either on the top or under side of the Valve body.

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	16	18	20	22	24
Length Screw End Valves	7½	7½	8¼	9	10	10¾	11½	13	14½	Valves from 3 to 7 inches inclusive made either flanged or screwed end. Larger sizes flanged end only.									
Length Flanged Valves	Screw		8¼	4	10	10¾	11½	13	14¼	16½	18	19	21	23	26	29½	33	36	39
Diameter of Flanges	End Only.		7½	8½	9	9¼	10	11	12½	13½	15	16	19	21	23½	25	27½	29½	32
Each	$14		16	18	22	25	30	40	60	80	100	120	145	220	345	465	600	750	900	1050

Flanged Valves sent unless otherwise ordered. Standard drilling has been adopted in these Valves and when ordered drilled, will be drilled such unless otherwise specified.

The Davis Automatic Open Air Relief Valve.



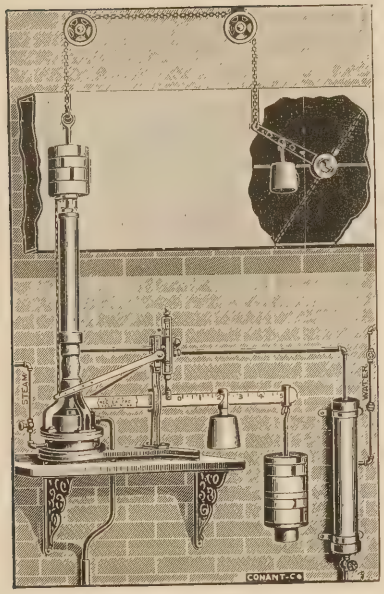
DAVIS AUTOMATIC OPEN AIR RELIEF VALVE.

The primary purpose of this Valve is to provide a quick relief to the atmosphere of pressure accumulating in the condenser. It comes into play upon starting the engine, and before the condenser begins to operate or when for any cause the vacuum is suddenly lost in the condenser and to relieve any pressure that would be caused from the exhaust, an open air relief must be provided. Upon pressure accumulating under the discs, it raises quickly. The plungers at each extremity of the axis act as cushions preventing any hammering or pounding and abrasion of the seat. Upon lowering the plunger has to displace the water in the lower dash pot and thus a gradual closing is accomplished. Steam metal bushing and babbit metal form the two ground seats and insures a perfectly tight closure of the Valve. This Valve is provided with a hand wheel so that the Valve may be kept open permanently at any time. Full area of pipe is allowed through the port and the globe shape of the body eliminates any choking of the exhaust. The verticle type is practically the same except that it is provided with a friction clutch to prevent abrasion and hammering of seats. The disc is guided at the top and bottom by spiders, thus assuring the seating each time in the same place.

We claim there is no equal to this Valve in holding tight under high vacuums and of noiseless and easy exhausting to the atmosphere under the least accumulation of pressure. It is compact, neat and simple and intended only for the purpose for which it is built, namely providing for a quick exhaust to the atmosphere in case of back pressure on the condenser and engines.

Size	6	8	10	12	14	16	18	20	22	24	26	28
Length Face to Face. Horizontal Type Only	20	20	24	29	32	36	40	43	47	51½	57	64
Height from Center of Pipe. Horizontal Type Only	12½	12½	16	19	22	23	24	25	28	30	33	36
Diameter of Flanges	11	13½	16	19	21	23½	25	27½	29½	31½	34	36
Price	$270	335	415	500	584	670	917	1170	1420	1600		

The Locke Damper Regulators.



THE LOCKE GRADUATED HYDRAULIC DAMPER REGULATOR.

The Locke Graduated Hydraulic Damper Regulator.

This Regulator is guaranteed to control the heaviest dampers and requires no outside attachments, such as piston and cylinders.

This Regulator will move the damper slightly under small variation of steam pressure, without allowing it to fully open or close.

In this Regulator, water from city main is employed to operate a damper motor by being admitted through a small valve, which is attached to and operated by the lever of the steam weighing device, which vibrates with every pulsation of steam. When the steam pressure increases a fraction of a pound the beam is raised to open a passage for water to the damper motor, which moves the damper just enough to correct the steam pressure. A peculiar cut-off device closes the water valve, after it has been opened by the rise in steam pressure and holds the damper partially open, moving it back and forth from one-eighth to one-half of an inch, on so slight a change of pressure as not to be noticed on the steam gauge.

High Grade Graduated, full Nickel Plated	150.00
High Grade, not Graduated, Nickel Plated	130.00
Not Graduated, Plain Finish	110.00

All Extra Fittings included.

The Locke "Little Giant" Damper Regulator.

This machine will operate on low or high pressure up to 100 pounds.

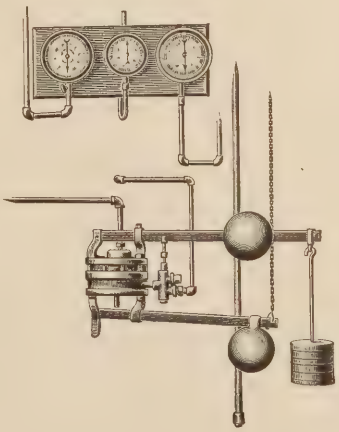
It is adapted to small plants of one or two boilers, where a machine of moderate price is desired.

It embodies some of the most essential features of the graduated machine, including the water valve, which is a most important feature in Hydraulic Damper Regulators.

This machine is guaranteed to regulate within one pound pressure either way from point desired.

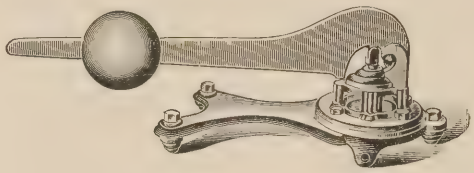
In ordering state boiler pressure, and also water pressure available.

Price, including globe valves, pulleys and chain for attaching to damper 78.00



THE LOCKE "LITTLE GIANT" DAMPER REGULATOR.

The Nason High Pressure Damper Regulators.

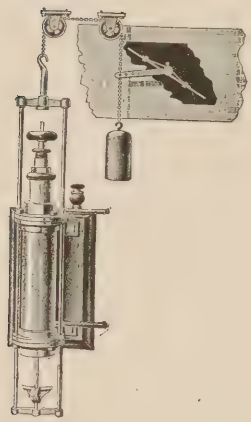


High Pressure Regulator—Diaphragm Pattern.

Size	1	2	3
With Weight for Pressure of, pounds	50	70	70
Horse Power Boiler	1 to 5	10 to 20	30 to 500
Price, each	10.00	15.00	25.00
Extra Diaphragms, each	1.00	1.50	2.50

If higher pressures than those stated are to be carried, the necessary weights will be furnished at an additional cost of about 3 cents per pound.

High Pressure Damper Regulator—Piston Pattern.



HIGH PRESSURE DAMPER REGULATOR.
Piston Pattern.

Our Piston Pattern Damper Regulator, as illustrated, can be used on steam pressures from 15 to 250 pounds.

It is direct acting, entirely automatic and requires no lever, heavy weights or water pressure to operate it.

We guarantee this Regulator to be capable of effecting a change in the position of the damper with a variation of one pound in the steam pressure.

The Regulator consists of a composition cylinder, within which a piston is fitted with water packing. The piston rod is connected by a chain over guide rolls to the lever of the damper, on which is hung a weight sufficient to overhaul the piston and open the damper regardless of any ordinary friction.

The motion of the piston is controlled by a metallic diaphragm, which operates the valve, alternately closing and opening the damper, as the boiler pressure increases or diminishes.

The Regulator is nickel plated and is furnished with friction wheels, chain, weights, screws and brass steam pipe, complete, as illustrated, at the following prices:

For Dampers up to 40 inches diameter	80.00
" " " 60 " "	100.00
" " " 72 " "	150.00



"ARKA" HIGH PRESSURE DAMPER REGULATOR.

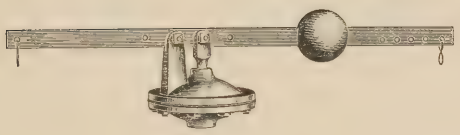
The "Arka" High Pressure Damper Regulator.

A modern, up-to-date, sensitive Regulator, made entirely of steam metal; controlled by live, dry steam, without diaphragm, packing, stuffing boxes, leather washers, or complicated parts to wear out and give trouble. Works close to any steam pressure and will continue to do so for years without cost for new parts or repairs.

Handsome in appearance; occupies but little space; is an ornament in any engine or boiler room, and will show a saving in fuel of from 5 to 15 per cent. under ordinary boiler conditions.

No. 1.	Suitable for Dampers to 40 inches diameter	85.00
No. 3.	" " " 30 " "	75.00

The Nason Low Pressure Damper Regulators.



LOW PRESSURE DAMPER REGULATOR.
Standard Pattern.

Standard Pattern.

The Regulator shown in illustration is our standard type as manufactured by us for automatically controlling the check drafts on low pressure steam boilers employed in house heating. This Regulator is made in two sizes, of best material and workmanship, and can be furnished with or without our Bottle Siphon.

Plain as shown, 7-inch plates	5.00
" " 9 " "	7.50

With Bottle Siphon.

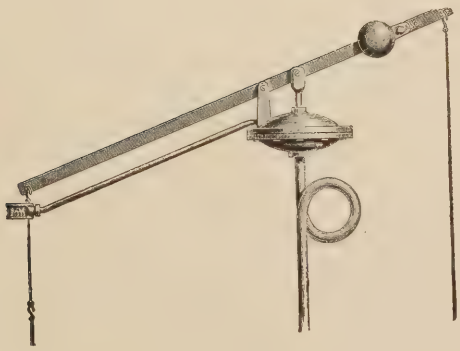
This illustration shows our Standard Low Pressure Damper Regulator as used in conjunction with our Nason Bottle Siphon, which latter has been designed by us to supersede the cumbersome and unsightly "U" and goose neck patterns heretofore used on steam house heating boilers.

As will be seen, it is neat and compact in appearance, and its form of construction is such as to insure complete immunity from injury to the diaphragm through contact with steam, thus indefinitely prolonging the life of the Regulator.

Complete as shown, 7-inch plates	7.75
" " 9 " "	10.25



LOW PRESSURE DAMPER REGULATOR.
With Nason Bottle Siphon.



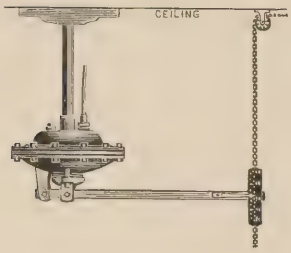
LOW PRESSURE DAMPER REGULATOR.
With Safety Attachment.

With Safety Attachment.

A device for automatically controlling the check drafts on low pressure steam boilers, with a safety attachment to insure the positive closing of the checks in the event of the bursting of the regulator diaphragm. Made in two sizes and can be furnished with goose neck siphon as shown, or with our Nason Bottle Siphon. A thoroughly reliable device and a necessary adjunct to any automatically regulated heater.

As shown, 7-inch plates	8.00
" 9 " "	12.00
7-inch plates with Bottle Siphon	9.00
9 " " " " "	13.00

Temperature Regulators.



HOT AIR FURNACE REGULATOR.

Regulator for Hot Air Furnace.

The Regulator, as shown, controls the dampers of a hot air furnace. The diaphragm is inverted for convenience in hanging, and is supported from a flange attached to a board on the ceiling by means of a short piece of iron pipe. It is placed in any convenient position so that the end of the lever comes over the damper. The check draft is also connected by means of a chain and pulleys. Chains, pulleys and everything necessary to put up the apparatus are furnished with each outfit, including thirty-five feet of lead tube with which to connect the thermostat.

Furnace Regulator with Thermostat complete..... 40.00

Regulator for Low Pressure Steam.



STEAM REGULATOR.

This Regulator is used in connection with the thermostat to control a low pressure steam apparatus.

It is connected below the water line in the same manner as the ordinary diaphragm, and serves the same purpose—that is, to limit the steam at the desired pressure. It contains two rubbers, both of which are raised by the steam, while the pressure from the thermostat raises the upper one only.

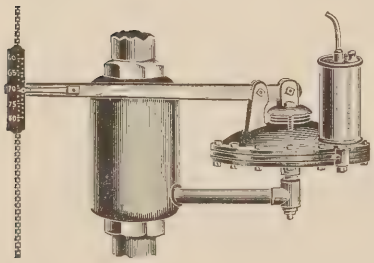
Whenever the house reaches the temperature to which the Regulator has been adjusted, the damper is closed by the action of the thermostat, whether there is any steam in the boiler or not. In all ordinary weather no steam will be indicated on the gauge, a light vapor filling the radiators and maintaining a uniform temperature, the result being a

Great Saving of Fuel.

A house cannot be overheated in ordinary winter weather with a steam plant when left to the control of this thermostat.

Steam Regulator with Thermostat complete..... 45.00

Regulator for Hot Water.



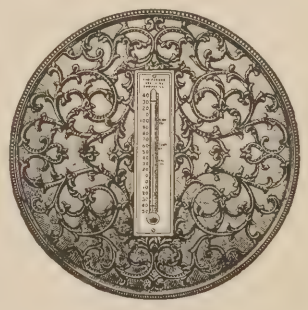
HOT WATER REGULATOR.

The diaphragm and generator, as shown in cut, is used on a hot water heater, where there is a flow pipe of two inches or less in which the generator can be placed.

It can be located in a horizontal pipe, which is sometimes desirable where the basement ceiling is low and there is not room for it in the vertical pipe. In such cases the diaphragm may be inverted and hung directly under the generator, or it may be placed at some distance from the generator, using nipples and elbows to bring it to the desired position. It may be used either side up, but care must be taken to support it, either by hangers from joists above or otherwise, so that it will remain firm where placed. In this way it may be located several feet distant from the generator.

Hot Water Regulator with Thermostat complete.... 50.00

The Thermostat.



THERMOSTAT.

The cut shows the Thermostat as it appears on the wall. It is twelve inches in diameter, about one inch thick, very artistic in appearance, and is an ornament to any room.

It is connected by a small lead tube with the diaphragm of the regulator, the lead tube being placed inside the partition, out of sight. This is easily done in a finished house without the least injury to the walls. The lead tube is furnished with the apparatus.

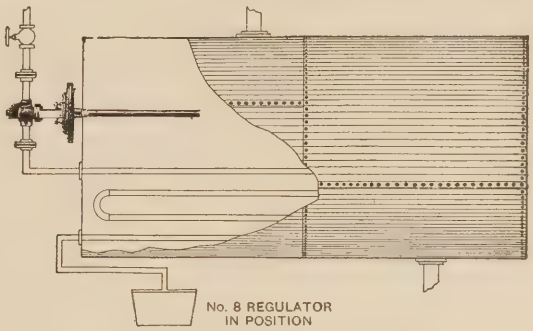
Each Thermostat is provided with a thermometer, as shown, attached to a removable and highly ornamental case, finished in antique copper. Any style of finish may be had at a slight extra cost.

The Powers Regulators for Hot Water Tanks.

For Controlling the Temperature of a Steam Heated Water Supply in Hotels, Asylums, Hospitals, Office and Apartment Buildings, etc.



NO. 8 REGULATOR.
Enlarged View.



No. 8 Regulator.

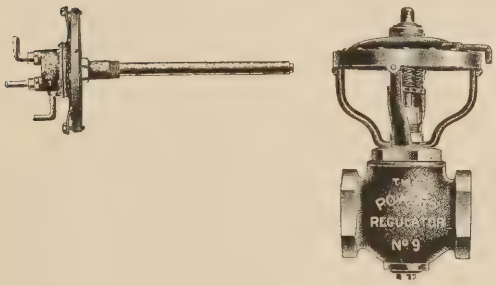
As shown in section, this device screws into a 1¼-inch opening in tank, projecting inward 20 inches. The steam pipe is brought to and connected with the Regulator Valve, as shown.

Steam being admitted into the coil, raises the temperature of the water in tank to the point desired. The heat acting upon the tube of the Regulator, then controls the action of the Regulator Valve, admitting just enough steam to the coil to maintain the desired temperature.

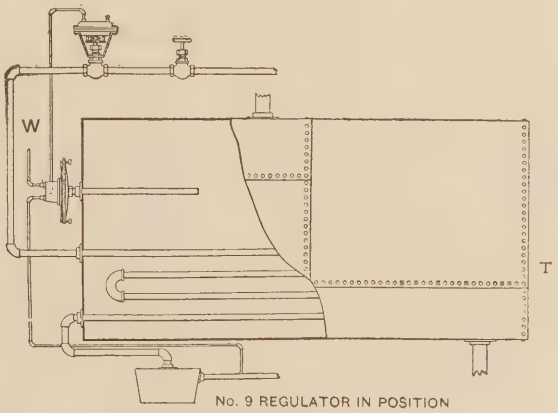
It is desirable that the Regulator should project into the tank wherever practicable.

When conditions do not admit of this method of installation, a separate circulation pipe should be run to receive the Regulator.

In ordering always state what water temperature is desired.



NO. 9 REGULATOR.
Enlarged View.



No. 9 REGULATOR IN POSITION

No. 9 Regulator.

The No. 9 Regulator is used where steam supply is larger than 2 inches. As shown in section, the valve and Regulator are detached—connection being made at W with the water supply, and the water pressure used to operate the valve. The valve may be located in steam pipe at any point where convenient.

This Regulator should project into tank, as shown in cut, wherever practicable.

When conditions do not admit of this method of installation, a separate circulation pipe should be run to receive the Regulator.

NOTE.—If it is desired to use the No. 9 Regulator with valve smaller than 2½ inches, it can be so furnished, and in such case the No. 8 list will govern the price.

The use of low-pressure steam with these Regulators is universally recommended.

In ordering, invariably specify the size of valve and the temperature of water desired in tank.

These Regulators may be placed in a circulation pipe instead of tank, if more convenient, but if so arranged, the circulation must be free, so that the Regulator will be exposed to the tank temperature.

We recommend these Regulators as thoroughly reliable in maintaining a water temperature at any point desired.

Size	1	1¼	1½	2	2½	3	4
Style	No. 8	No. 8	No. 8	No. 8	No. 9	No. 9	No. 9
Each	70.00	75.00	80.00	90.00	95.00	100.00	110.00

The Pickering Governor for Stationary, Portable and Traction Steam Engines.

Justly celebrated for closeness in regulation, because it is constructed without a joint, making its action direct and sensitive, insuring quick response to any change in load on engine. This construction likewise makes the Governor desirable for severe and continuous duty, as it requires a minimum amount of attention.

It was the first Governor constructed of the spring type, and has maintained its lead in modern improvements.

Made in all sizes from ½ inch to 10 inches.

All parts fitted accurately to gauges insuring interchangeability throughout.

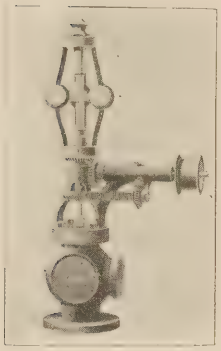


Fig. 2, Class B, represents Governor with Speeder attachment by use of which the speed of Engine can be varied while in motion.

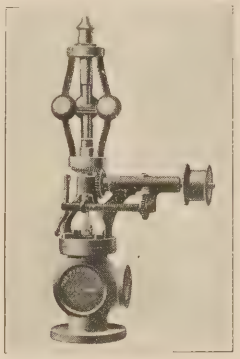


Fig. 3, Class B, same as Fig. 2, with addition of Sawyer's Lever. Price the same.

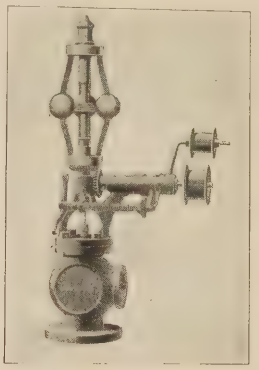
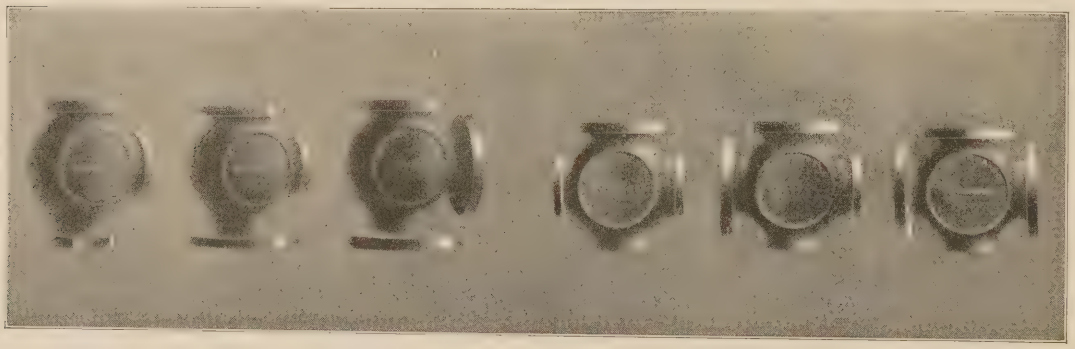


Fig. 4, Class A, represents the Governor with Automatic Stop, which closes the Valve when belt breaks. This device is simple and certain in its action. When Governor is driven by vertical belt, order should so specify.



The above illustrations show different forms of Valve Chambers commonly used.

Size Gov. or Dia. of Steam Pipe	½	¾	1	1¼	1½	2	2¼	2½	3	3½	4	4½	5	6	7
Diameter Base Flange	Screwed or 3½	Screwed or 3½	Screwed or 4½	Screwed or 5	5¾	6½	7	7½	9	10	11	11	12	14	15
Diameter Side Flange	Screwed	Screwed	Screwed	Screwed	Screwed	Screwed	6	Screwed or 6½	8	8½	9½	10	11	13	14
Speed of Governor	500	500	450	450	420	420	380	380	320	320	320	320	275	275	275
Diam. Pulley on Governor	1½	1½	2	2	2½	2½	3	3	4	4	5	5	5	6	7
Width of Belt	¾	¾	1¼	1¼	1½	1½	2	2	2	2	2½	2½	2½	3	3
Price, Class B, Plain	$14	16	18	21	25	30	35	40	50	60	71	83	94	122	150
" " B, Finished	16	18	20	24	29	34	40	45	58	69	81	94	106	136	166
" " A, Plain	--	--	21	24.50	29.50	36	42	48	59	71	83	96	109	140	170
" " A, Finished	--	--	23	27.50	33.50	40	47	53	67	80	93	107	121	154	186

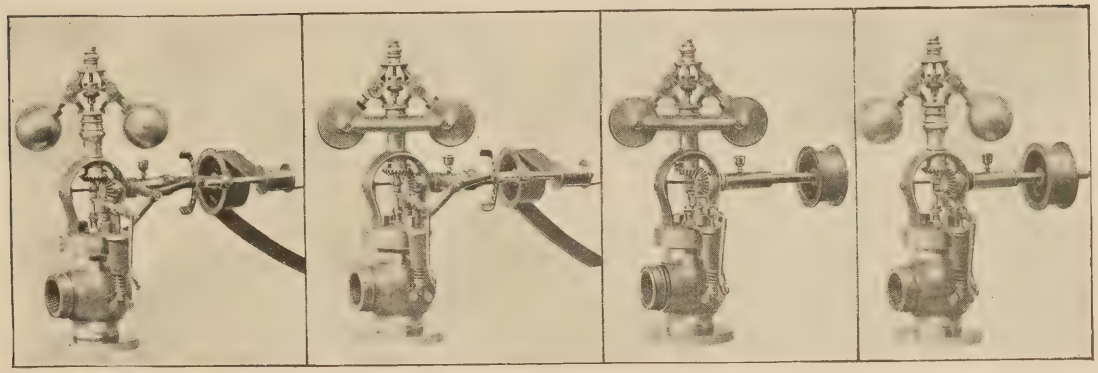
Directions for Ordering.

Give figure number of Governor and specify the form of Valve Chamber desired as designated above, advising whether Governor is to be plain or finished.

If this information is not given, Figure 2 will be furnished with openings flanged or screwed, whichever is standard for the size as described in the list.

PULLEYS. If given speed of engine and diameter of pulley on engine shaft from which Governor is driven, a pulley of proper size will be attached to Governor, otherwise pulley of diameter mentioned in table will be provided.

The Judson Governor.



MEDIUM SPEED. Class A. Standard. | HIGH SPEED. Class A. Spring. | HIGH SPEED. Class B. Spring. | MEDIUM SPEED. Class B. Standard.

In Ordering.—For convenience in ordering, the two kinds of Governors—Standard and Spring—are described in two classes, A and B—workmanship and quality the same. Class A, either Standard or Spring Governor, with Automatic Stop Motion, Spring Speeder and Sawyer's Lever. Class B, the same as Class A in all respects, except without Automatic Stop Motion.

Governors with Angle Chambers and Flanged Base will be sent in all cases unless otherwise ordered.

We also furnish Screwed Base and Side Angle Chambers as large as 3-inch, and Horizontal Screwed Chambers up to 2½-inch, larger sizes of Horizontal Chambers being flanged.

The Automatic Stop Motion, Class A, is simple, reliable, with no intricate parts to get out of order; never gums and sticks, but always acting promptly and effectively; is a sure prevention against accidents. This Stop Motion will operate with belt running directly up or down, or at an angle from Governor, and also when the Pulley Shaft of Governor is of unusual length. The Spring Speeder, used to change speed of engine, allows full throw of valve under all conditions of engine load. The position of speeder enables it to be readily manipulated when the engine in is motion. The Sawyer's Lever (a Lever connected with Speeder Lever) works the Governor Valve up or down, independent of the Governor, at the will of the operator. By means of a cord or wire attached to it, the engine can be controlled from a distance.

Size of Governor. Dia. of Opening	½	¾	1	1¼	1½	2	2¼	2½	2¾	3
Speed Standard Governor	260	260	240	210	185	185	175	150	150	140
" Spring "	305	300	280	270	255	270	230	215	215	205
Diameter Pulley on Spring Governor	2½	2½	2½	3	3½	3½	4	4½	4½	5½
" " " Standard "	2½	2½	3	3½	4	4	4½	5	5	6
Width of Belt	1¼	1¼	1¼	1¼	1½	1½	2	2	2	2
Diameter Cyls. 300 ft. Piston Speed	3	4	5	6	7	9	10	12	12	14
" " 400 " " "	2½	3	4	5	6	8	9	10	11	12
" " 500 " " "	-----	-----	3½	4½	5	7	8	9	10	10
" " 600 " " "	-----	-----	-----	4	4½	6	7	8	9	9
Price, Class A, Plain	$--	--	21	24.50	29.50	36	42	48	53	59
" " A, Finished	$--	--	23	27.50	33.50	40	47	53	59	67
" " B, Plain	$14	16	18	21	25	30	35	40	45	50
" " B, Finished	$16	18	20	24	29	34	40	45	51	58

Size of Governor. Dia. of Opening	3½	4	4½	5	5½	6	7	8	9	10
Speed Standard Governor	135	130	130	125	110	105	105	100	100	100
" Spring "	200	185	185	175	165	145	145	140	140	135
Diameter Pulley on Spring Governor	6	6½	7½	7½	9	10	10½	12	14	14
" " " Standard "	6½	7½	8	8	10	11	11	14	16	16
Width of Belt	2	2½	2½	2½	2½	2½	3	3	3½	3½
Diameter Cyls. 300 ft. Piston Speed	16	18	20	22	24	26	31	36	40	45
" " 400 " " "	14	16	18	20	22	23	27	31	35	39
" " 500 " " "	12	14	16	18	20	21	24	28	31	35
" " 600 " " "	11	13	15	16	18	19	22	25	28	32
Price, Class A, Plain	$71	83	96	109	124	140	170	210	241	270
" " A, Finished	$80	93	107	121	137	154	186	227	261	290
" " B, Plain	$60	71	83	94	108	122	150	185	215	240
" " B, Finished	$69	81	94	106	121	136	166	202	235	260

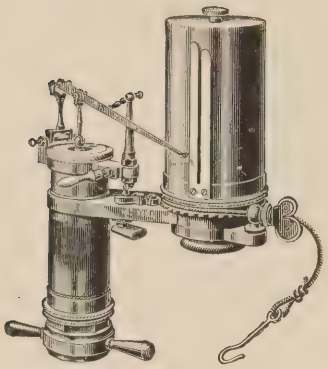
All Governors are complete with Speeder, Turned Flanged Pulley, Sawyer's Lever. No Extras.

In ordering, if we are informed of Speed of Engine and Diameter of Pulley on Engine Shaft from which Governor is driven, will put proper size of Pulley on Governor, otherwise the size of Pulley mentioned in table will be furnished with each Governor. When Stop Valves are ordered, Angle will be sent unless Globe is specified.

Interchangeable.—These Governors are made in duplicate so that new parts can be readily substituted for those broken or worn.

Speed of each Governor stamped on Revolving Head.

Engine Indicators, Planimeters and Reducing Wheels.



IMPROVED ROBERTSON-THOMPSON INDICATOR.

Engine Indicator.

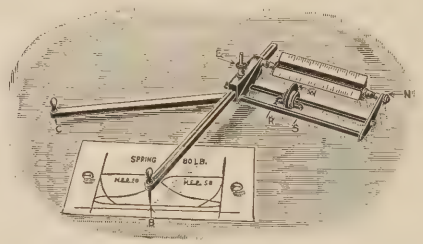
Each Indicator is packed in a handsome hardwood case and is fitted with extra ¼-inch area piston, detent motion, 2 springs as selected, either one 3-way or two straightway cocks, scales, cards, oiler, cord, book of instructions, etc.

Price, complete, for Steam 60.00
" " " Ammonia 70.00

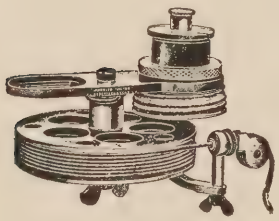
Willis Planimeter.

This instrument is specified by the U. S. Navy, the British Government and almost all the prominent engineers throughout the country.

Price, complete, packed in Velvet Lined Leather Case.. 18.00



IMPROVED WILLIS PLANIMETER.

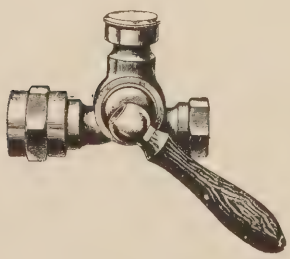


IMPROVED VICTOR REDUCING WHEEL.

Improved Victor Reducing Wheel.

The most acceptable assistant in indicator practice.

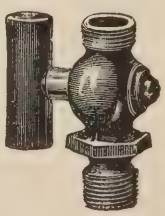
Price, complete, with Bushings for all Stroke Engines 15.00



3-WAY COCK.

To fit all makes of Indicators.

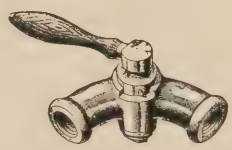
N. P. or Pol. Brass, for steam.. 6.00
Steel, for Ammonia 10.00



STRAIGHTWAY COCK.

To fit all makes of Indicators.

N. P. or Pol. Brass, for Steam.. 3.00
Steel, for Ammonia 5.00



LONG TURN ELBOW COCK.

A proper cock in most modern Indicator Practice.

Nickel Plated or Polished Brass, for steam, per pair..... 6.00

The Nason Pressure Gauges.



STEAM GAUGE, SINGLE SPRING.



SECTION.



STEAM GAUGE, DOUBLE SPRING.



SECTION.

Steam Gauges—Single Spring.

Size Dial	24	20	18	16	14	12	10	8½
Iron Case, Brass Ring	200.00	135.00	110.00	90.00	75.00	50.00	32.00	22.00
" " Nickel Plated Ring	206.00	140.00	113.00	92.00	76.50	51.50	33.00	22.75
Brass Case	260.00	190.00	155.00	125.00	100.00	75.00	40.00	30.00
Nickel Plated Case	280.00	205.00	167.50	135.00	107.50	79.00	43.00	32.50
Brass Deep Case, O. G. or Oct. Ring	----	----	----	----	----	80.00	44.00	33.50
Nickel Plated Deep Case, O. G. or Oct. Ring	----	----	----	----	----	84.00	47.00	36.00

Size Dial	6¾	6	5½	5	4½	3½	3
Iron Case, Brass Ring	16.00	13.00	10.00	8.00	8.00	7.00	6.00
" " Nickel Plated Ring	16.60	13.50	10.25	8.20	8.20	7.18	6.15
Brass Case	20.00	16.00	12.00	11.00	10.00	9.00	8.00
Nickel Plated Case	22.00	17.50	13.25	12.00	11.00	9.75	8.60
Brass Deep Case, O. G. or Oct. Ring	23.00	18.50	13.75	12.50	11.50	10.25	9.25
Nickel Plated Deep Case, O. G. or Oct. Ring	25.00	20.00	15.00	13.50	12.50	11.00	9.75

Steam Gauges—Double Spring.

Size Dial	24	20	18	16	14	12	10	8½	6¾	6	5½	5	4½
Iron Case, Japanned	230	155	125.00	105.00	90.00	55.00	37.00	25.00	18.00	15.00	12.00	11.00	10.00
" " Nickel Plated Ring	236	160	128.00	107.00	91.50	56.50	38.00	25.75	18.60	15.50	12.25	11.20	10.20
Brass Case	280	200	170.00	140.00	115.00	80.00	45.00	34.00	22.00	18.00	14.00	13.00	12.00
Nickel Plated Case	300	215	182.50	150.00	122.50	84.00	48.00	36.50	24.00	19.50	15.25	14.00	13.00
Brass Deep Case, O. G. or Oct. Ring	---	---	----	----	----	85.00	49.00	37.50	25.00	20.75	16.25	15.00	13.75
N. P. Deep Case, O. G. or Oct. Ring	---	---	----	----	----	89.00	52.00	40.00	27.00	22.25	17.50	16.00	14.75

Standard Test Gauge.

Size Dial	10	8½	6¾	6	5½	4½	4	3½	3
Brass Case	50.00	40.00	30.00	25.00	20.00	16.00	16.00	14.00	14.00
N. P. Case	53.00	42.50	32.00	26.50	21.25	17.00	17.00	14.75	14.60
Morocco Case	----	----	----	----	----	----	3.00	3.00	2.50



STANDARD TEST GAUGE.

Duplex Steam and Air Gauge.

Size Dial	3
Brass Case	16.75
Nickel Plated Case	17.00

Designed for use on steam vehicles with black hand for steam pressure in boiler, and red hand for indicating pressure of air in gasoline tank.



DUPLEX STEAM AND AIR GAUGE.

"Columbia" Pressure Recording Gauge.



COLUMBIA PRESSURE RECORDING GAUGE.

It consists of a Bourdon Tube Spring of suitable form in connection with a novel adjustable lever mechanism and a pointer, which carries the marking pen. It is provided with a clock movement, to which is attached a metal disc with the chart, making one revolution every 24 hours.

The circular lines on the chart indicate the pressure, while the radial arcs correspond to the hours of the day.

These Gauges are adapted for recording the pressure of steam, water, gas or air, and may be placed near the boiler, or at any distance therefrom—for instance, in the office—always giving a true record of the fluctuations of pressure taking place in boiler, water and gas pipes, etc. They are made for all pressures.

Gauges and charts for the following pressures are kept in stock:

For Steam, Gas and Air---- 25, 50, 75, 150, 200 pounds per square inch.
" Water ---- 100, 200, 300 feet of water column.

"Columbia" Recording Gauge, in highly Japanned Iron Case, with Hinged Brass Cover and Lock, including 100 Charts for temperatures not exceeding 300° Fahrenheit	50.00
Solid Brass Case, highly Finished or Nickeled	60.00
For temperatures from 212° to 700° Fahrenheit	75.00
Electric Alarm Attachment for either of the above Gauges	10.00
Additional Charts, per hundred	.75
Recording Ink, per bottle	.25

The Nason Pressure Gauges.



AMMONIA GAUGE.



COMPOUND PRESSURE AND VACUUM GAUGE.

Ammonia Gauges for Pressure or Pressure and Vacuum.

Size Dial	8½	8	6¾	6	5½	5	4½	3½
Iron Case and Ring	45.00	45.00	40.00	35.00	30.00	30.00	25.00	25.00
" Nickel Plated Ring	45.75	45.75	40.60	35.50	30.50	30.50	25.50	25.50

These Gauges are made for any required pressure. In ordering, state whether a compound scale showing pressure and vacuum or pressure only is required. If wanted with connection at back it must be so stated in ordering.

Compound Pressure and Vacuum Gauges.

Size Dial	12	10	8½	6¾	6	5½	5	4½	3½
Iron Case, Japanned	60.00	40.00	30.00	20.00	16.00	14.00	14.00	12.00	10.00
" Nickel Plated Ring	61.50	41.00	30.75	20.60	16.50	14.25	14 25	12.20	10.18
Brass Case	80.00	50.00	40.00	25.00	20.00	16.00	16.00	14.00	12.00
Nickel Plated Case	84.00	53.00	42.50	27.00	21.50	17.25	17.25	15.00	12.75
Brass Deep Case, O. G. or Oct. Ring	85.00	54.00	43.50	28.00	23.00	18.50	18.50	16.00	13.75
Nickel Plated Deep Case, O. G. or Oct. Ring	89.00	57.00	46.00	30.00	24.50	19.75	19.75	17.00	14.50

These Gauges are graduated for pressure in pounds per square inch, and for vacuum in inches of mercury column or pounds per square inch, as may be desired; fifteen pounds of pressure being equal to thirty inches of vacuum. If a pressure exceeding fifteen pounds is required it should be stated in ordering.



ALTITUDE GAUGE.



COMBINATION WATER PRESSURE GAUGE.



HYDRAULIC OR HYDROSTATIC GAUGE.

Altitude Gauges.

For Indicating the Height of Water Column in Feet.

Size Dial	12	10	8½	6¾	6	5½	5	4½	4	3½
Iron Case, Japanned	60.00	40.00	30.00	20.00	16.00	14.00	12.00	12.00	12.00	10.00
" Nickel Plated Ring	61.50	41.00	30.75	20.60	16.50	14.25	12.20	12.20	12.20	10.18
Brass Case	80.00	50.00	40.00	25.00	20.00	16.00	14.00	14.00	14.00	12.00
Nickel Plated Case	84.00	53.00	42.50	27.00	21.50	17.25	15.00	15.00	15.00	12.75
Brass Deep Case, O. G. or Oct. Ring	85.00	54.00	43.50	28.00	23.00	18.50	16.00	16.00	16.00	13.75
Nickel Plated Deep Case, O. G. or Oct. Ring	89.00	57.00	46.00	30.00	24.50	19.75	17.00	17.00	17.00	14.50

Combination Water Pressure Gauges.

Size Dial	12	10	8½	6¾	6	5½
Iron Case, Japanned	60.00	40.00	30.00	20.00	16.00	14.00
" Nickel Plated Ring	61.50	41.00	30.75	20.60	16.50	14.25
Brass Case	80.00	50.00	40.00	25.00	20.00	16.00
Nickel Plated Case	84.00	53.00	42.50	27.00	21.50	17.25
Brass Deep Case, O. G. or Oct. Ring	85.00	54.00	43.50	28.00	23.00	18.50
Nickel Plated Deep Case, O. G. or Oct. Ring	89.00	57.00	46.00	30.00	24.50	19.75

For indicating pressure of water in pounds per square inch and corresponding height of water column.
In ordering state maximum height of water pressure ever attained where it is to be applied.

Hydraulic or Hydrostatic Gauges.

Size Dial	12	10	8½	6¾	6	5	4½	3½
Iron Case, Brass Ring	110.00	90.00	70.00	50.00	35.00	30.00	25.00	22.00
" Nickel Plated Ring	111.50	91.00	70.75	50.60	35.50	30.50	25.50	22.50
Brass Case	125.00	100.00	80.00	60.00	40.00	35.00	30.00	26.00
Nickel Plated Case	129.00	103.00	82.50	62.00	41.50	36.00	31.00	26.75

Maximum Hand, each.. 5.00 Hydraulic Needle Valve.. 10.00 Hydraulic Check Valve.. 8.00
No extra charge for marking tons per ram on dials.
In ordering state diameter of piston of ram and highest pressure to be carried in pounds per square inch.

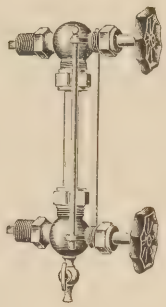
Water Gauges and Gauge Glasses.



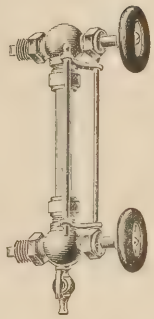
No. 0000.



No. 0.



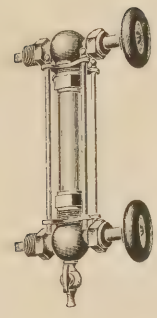
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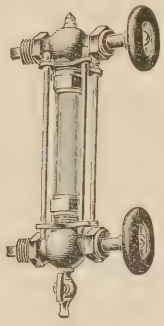
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Water Gauges.

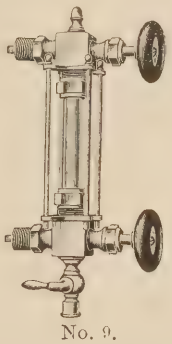
No.	Wheel.	I. P. Thread.	Style.	Glass.	Each.
0000	------	1/2	For Expansion Tank	5/8 x 12	2.60
0	Wood	3/8	Polished	5/8 x 10	3.75
1	Iron	1/2	Bronzed	5/8 x 12	3.00
3	Wood	1/2	Polished	5/8 x 12	4.25



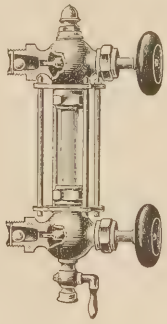
No. 5.



No. 7.



No. 9.

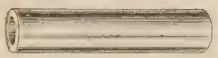


AUTO. SELF-CLOSING.
Special Heavy Pattern.

Water Gauges.

No.	Wheel.	I. P. Thread.	Style.	Glass.	Each.
5	Wood	1/2	Polished	5/8 x 16	5.25
7	"	3/4	"	3/4 x 16	6.00
9	"	1/2	"	5/8 x 12	6.00
Auto. Self-Closing	"	1/2	"	5/8 x 12	12.00
" "	"	3/4	"	3/4 x 12	18.00

Scotch Water Gauge Glasses.



Length, Inches.		External Diameter 1/2	5/8	3/4	7/8	1
10.	Per doz	3.00	3.00	3.60	5.04	6.12
11.	"	3.24	3.24	3.96	5.64	6.72
12.	"	3.60	3.60	4.32	6.12	7.32
13.	"	3.84	3.84	4.80	6.60	7.92
14.	"	4.20	4.20	5.16	7.08	8.52
15.	"	4.44	4.44	5.52	7.56	9.12
16.	"	4.80	4.80	5.88	8.16	9.72
17.	"	5.04	5.04	6.24	8.64	10.32
18.	"	5.40	5.40	6.60	9.12	10.92
19.	"	5.64	5.64	7.08	9.60	11.52
20.	"	6.00	6.00	7.44	10.20	12.12
22.	"	6.60	6.60	8.16	11.16	13.44
24.	"	7.20	7.20	8.88	12.12	14.64
30.	"	9.00	9.00	11.16	15.24	18.24
36.	"	10.80	10.80	13.44	18.24	21.96
48.	"	14.52	14.52	18.00	24.36	29.16
60.	"	18.12	18.12	22.56	30.48	36.48
72.	"	21.84	21.84	27.12	36.48	43.80

60 x 1 1/4 inches, 60.00.

Engine and Boiler Trimmings.



TEE HEAD, SINGLE THREAD.



TEE HEAD, DOUBLE THREAD.

Tee Head Air Cocks.

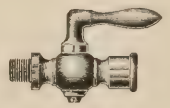
Size	1/8	1/4	3/8	1/2
Single Thread	.40	.40	.50	.60
Double "	.55	.55	.65	.90



LEVER HANDLE, SINGLE THREAD.



LEVER HANDLE, DOUBLE THREAD.



LEVER HANDLE, MALE AND FEMALE.

Lever Handle Air Cocks.

Size	1/8	1/4	3/8	1/2
Single Thread	.55	.55	.65	.75
Double "	.60	.70	.85	1.00
Lever Handle, Male and Female	.90	1.00	1.10	1.35



TEE HANDLE, BIBB AIR COCK.



LEVER HANDLE, BIBB AIR COCK.



LEVER HANDLE, DOUBLE THREAD, BIBB AIR COCK.

Bibb Air Cocks.

Size	1/8	1/4	3/8	1/2
Tee Handle	.70	.70	.80	.90
Lever " Single Thread	.80	.80	.90	1.00
" " Double "	.95	1.15	1.25	1.50



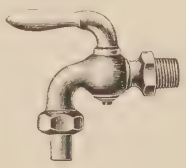
BIBB CYLINDER COCK, SINGLE THREAD.



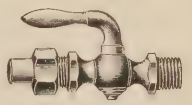
BIBB CYLINDER COCK, DOUBLE THREAD.

Bibb Cylinder Cocks.

Size	1/4	3/8	1/2	3/4
Single Thread	1.15	1.30	1.85	2.60
Double "	1.25	1.50	2.10	2.70



BIBB CYLINDER COCK, BENT COUPLING.



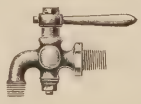
CYLINDER COCK, STRAIGHT COUPLING.

Cylinder Cocks with Unions.

Size	1/4	3/8	1/2	3/4
Bent Coupling	1.75	2.00	2.50	3.75
Straight "	1.75	2.00	2.50	3.75



STEAM BIBB, PLAIN.

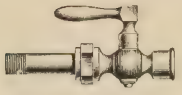


STEAM BIBB, SCREW NOZZLE.

Steam Bibbs.

Size	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2
Shanks Screwed for Iron Pipe	3/8	1/2	3/4	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Plain Pattern, Finished, per dozen	15.00	18.00	24.00	27.00	36.00	54.00	----	----	----	----
" " Rough, per dozen	12.00	15.00	18.00	21.00	30.00	42.00	60.00	96.00	180.00	300.00
Screw Nozzle Pattern, Finished, per doz.	17.00	20.00	27.00	30.00	39.00	57.00	----	----	----	----
" " " Rough, per doz.	14.00	17.00	24.00	27.00	36.00	54.00	----	----	----	----

Miscellaneous Trimmings and Fixtures.



GAUGE COCK WITH UNION.
Lever Handle.

Size	1/8	1/4	3/8
Each	1.75	1.90	2.00



GAUGE COCK.
Female, Lever Handle.

Size	1/8	1/4	3/8
Each	.85	.90	1.00



GAUGE COCK.
Female, T Handle.

Size	1/8	1/4	3/8
Each	.70	.75	.85



GAUGE SIPHON.
With Cock.



GAUGE SIPHON.
Without Cock.



ELBOW SIPHON.
With Cock.

Steam Gauge Siphon Cocks.

	Brass.	Nickel Plated.
Straight Siphon, with Cock	1.50	2.00
" " without Cock	1.00	1.50
Elbow Siphon, with Cock	1.50	2.00
" " without Cock	1.25	1.75



Iron Pipe Siphon	.25
Brass Pipe Siphon	1.00
" Nickel Plated Pipe Siphon	1.50



ROTATING GAUGE COCK.
Sizes 1/2 or 3/4 inch, each 2.00



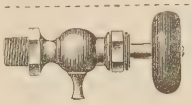
COMPRESSION GAUGE COCK.
Without Stuffing Box.

Size, thread	3/8	1/2	3/4
Each	.95	1.00	1.25



SELF-CLEANING GAUGE COCK.
Wood Handle.

Size	1/2	3/4
Brass, each	2.25	2.50



COMPRESSION GAUGE COCK.
With Stuffing Box.

Size, thread	3/8	1/2	3/4
Each	1.20	1.30	1.45



LITTLE GIANT GAUGE COCK.
For 200 Pounds Pressure.
Brass Polished.

Size, 3/8 or 1/2 inch	1.00
" 3/4 inch	1.10



DUPLEX
GAUGE COCK.

Size	3/8	1/2	3/4
Each	1.00	1.00	1.10



REGISTER
GAUGE COCK.

Size	3/8	1/2	3/4
Each	1.00	1.00	1.10



BRASS GUARDS FOR WATER GAUGES.

Length	12	14	16	18	20
Finished, each	.9	.10	.12	.15	.20

Diameter of Rods, 3/16 in.
Longer lengths to order.



GAUGE GLASS
WASHERS.

Size	1/2	5/8	3/4
Per doz	.40	.50	.60



FUSIBLE PLUG.

Size	3/8	1/2	3/4	1	1 1/4
Each	.30	.35	.50	.75	1.00

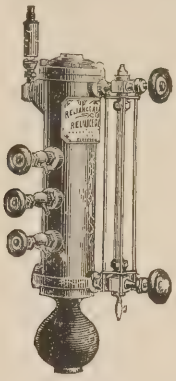


GAUGE GLASS CUTTER.
Each 1.50

The Reliance Safety Water Columns.



LOW ALARM.



FULL TRIMMED.



HIGH AND LOW ALARM.

Combination High and Low Water Alarms.

No. 1. Not guaranteed to work above 80 lbs. pressure. Variation between alarms, 6 inches. Size Water Gauge and Gauge Cocks, ½ inch. Size Steam and Water Connections, 1 inch.. Untrimmed--- 28.00
With Water Gauge and Gauge Cocks--- 35.00

No. 1½. For any ordinary pressure. Variation between alarms, 6 inches. Size of Water Gauge and Gauge Cocks, ½ inch. Steam and Water Connections, 1¼ inches. Untrimmed--- 28.00
With Water Gauge and Gauge Cocks--- 35.00

No. 5. For any ordinary pressure. Variation between alarms, 8 inches. Size of Water Gauge and Gauge Cocks, ¾ inch. Steam and Water Connections, 1¼ inches. Untrimmed--- 30.00
With Water Gauge and Gauge Cocks--- 40.00

No. 7. For Water Tube Boilers. Variation between alarms, 12 inches. Size of Water Gauge and Gauge Cocks, ¾ inch. Size of Steam and Water Connections, 1½ inches. Untrimmed--- 40.00
With Water Gauge and Gauge Cocks--- 50.00

No. 9. For Vertical Boilers. Variation between alarms, 18 inches. Size of Water Gauge and Gauge Cocks, ¾ inch. Size of Steam and Water Connections, 1½ inches. Untrimmed--- 40.00
With Water Gauge and Gauge Cocks--- 50.00

Larger sizes are made regularly up to 60-inch variations between alarms, and can be made of any variation for any purpose where steam or compressed air is used. Prices on request.

The No. 5 is the most popular size with users of horizontal boilers, but all depends upon the fluctuations of the water.

Low Water Alarms.

No. 2. Not guaranteed to work perfectly above 100 lbs. pressure. Gauge Cocks, 3 inches apart. Water Gauge Centers, 14 inches. Water Gauge and Gauge Cocks, ½ inch. Steam and Water Connections, 1 inch. Untrimmed--- 25.00
With Water Gauge and Gauge Cocks--- 32.00

No. 6. For any ordinary pressure. Water Gauge and Gauge Cocks, ¾ inch. Water Gauge Centers, 16 inches. Gauge Cocks, 4 inches apart. Steam and Water Connections, 1¼ inch. Untrimmed- 28.00
With Water Gauge and Gauge Cocks--- 37.00

The Nason Water Columns.



No. 3.



No. 2.



No. 1.



SPECIAL.

No	1	2	3	Special.
Without Trimmings	1.50	2.75	3.00	1.20
Dimensions.				
No	1	2	3	Special.
Height of Column, inches	17½	21¾	18½	12¼
Diameter, inches	2¼	(Oval) 4 x 2½	4½	2
Boiler Connections	½	¾	1¼	¾
Gauge Cocks	⅜	½	½ or ¾	⅜
Center Water Gauge Cocks	12	16	14	9

Internal area No. 3, 11 square inches.

Steam Whistles.



No. 4.
WITHOUT VALVE.



No. 5.
WITH SIDE VALVE.

Steam Whistles.

Diameter of Bell	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
Size Pipe Connection	¼	⅜	⅜	¾	¾	1	1	1¼	1½	2	2½	3
No. 4 Whistle	2.20	2.75	3.00	4.35	5.25	7.25	9.50	12.00	19.00	24.00	70.00	125.00
" 5 "	3.10	3.75	4.00	5.50	6.50	8.50	11.50	15.00	22.50	33.00	95.00	175.00

Single Bell Chime Steam Whistles.



No. 1.
WITHOUT VALVE.



No. 2.
WITH UPRIGHT VALVE.



No. 3.
WITH SIDE VALVE.

Chime Whistles.

Diameter of Bell	2	2½	3	4	5	6	8	10	12
Size Pipe Connection	½	¾	¾	1	1¼	1½	2	2½	3
No. 1 Whistle	5.00	7.00	8.00	14.00	22.00	38.00	85.00	150.00	260.00
" 2 "	----	----	----	18.00	28.00	42.00	----	----	----
" 3 "	7.00	9.00	11.00	18.00	28.00	42.00	100.00	180.00	300.00



LONG BELL
WHISTLE.

Long Bell Steam Whistle.

This Whistle, owing to its length, has a soft and far-reaching sound, and is, therefore, preferable to the shrill sound of a common whistle when operated under high pressure. They are made in the following sizes :

Long Bell Whistles.

Diameter of Bell	4	5	6	8	10
Size Pipe Connection	1	1¼	1½	2	2½

Length of Bell—Ranging from 16 to 36 inches.

Prices on application.

Organ Pipe Whistle.

This Whistle, owing to its length and form of bell, has a soft and musical, far-reaching sound, and is, therefore, in many cases, preferable to the shrill sound of the plain whistle, especially when operated under high pressure. Largely used on steam launches, etc.



ORGAN PIPE
WHISTLE.

Organ Pipe Whistles.

Diameter of Bell	1¼	1¾	2¼
Steam Pipe Connection	½	½	1
Each	8.00	10.00	15.00

Mocking Bird Whistles.



No. 10.
MOCKING BIRD WHISTLE.



No. 11.
COMBINATION OR FIRE ALARM WHISTLE.

The Mocking Bird Whistle, as illustrated, is recommended where a howling or variable sound is desired. It is very penetrating and can be heard at a great distance, and while blowing can be readily detected from the ordinary whistle.

It is adapted for steamboats, factory or power plants, and establishes an individuality to the respective party that may be using it.

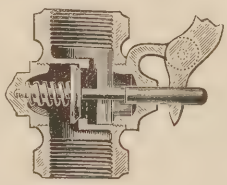
It is operated by pulling the chain connecting piston while whistle valve is open, and can also be used as an ordinary whistle by not manipulating chain connecting piston.

The Combination or Fire Alarm Whistle has been used extensively for fire signaling purposes on factory and power plants in general, especially in small cities and towns where it is necessary to have some means of attracting the attention of local fire companies and the operators in factories, etc., in case of fire. It is operated by manipulating piston rod up and down as shown in cut, and can also be used as an ordinary whistle by allowing the piston to remain stationary while blowing.

Mocking Bird Whistles.

Diameter of Bell	2½	3	3½	4	5	6
Size Pipe Connection	¾	1	1	1¼	1½	2
No. 10. Whistle	10.50	14.00	20.00	28.00	40.00	56.00
" 11. "	24.00	----	31.00	----	40.00	100.00

Whistle Valves.

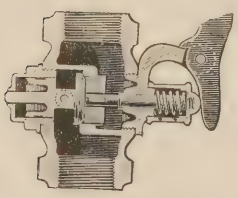


WHISTLE VALVE.

Standard Whistle Valves.

Size	½	¾	1	1¼	1½	2	2½	3
Each	2.50	3.00	3.50	5.00	6.00	9.00	18.00	27.00

Compound Whistle Valves.



COMPOUND WHISTLE VALVE.

This Valve is especially adapted for use where high pressure is carried, as it is opened with the least effort.

The Compound Automatic Whistle Valve should be used on all large-size whistles operating under high pressure.

Compound Whistle Valves.

Size	2	2½	3
Each	25.00	35.00	45.00

Miscellaneous Lunkenheimer Specialties.

Lunkenheimer Steam Whistles.



Fig. 445.
"MOCKING-BIRD."



Fig. 441.
"PLAIN."



Fig. 447.
"CHIME."

These Whistles are all made of the highest grade of material. The workmanship and finish is the best and each is carefully tested and tuned before leaving the factory. The "Dome" shaped bell makes them neater in appearance besides being considerably more substantial.

Steam Whistles.

Size, diameter bell	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
Pipe Connection	¼	¼	⅜	½	¾	¾	1	1¼	1½	1½	2	2½
Fig. 441	3.10	3.75	4.00	5.50	6.50	8.50	11.50	15.00	22.50	33.00	95.00	160.00
" 441 No valve	2.20	2.75	3.00	4.35	5.25	7.25	9.50	12.00	19.00	24.00	70.00	133.00
" 445	----	----	----	----	10.50	14.00	20.00	28.00	40.00	56.00	----	----
" 445 No valve	----	----	----	----	9.00	12.00	17.50	25.00	37.00	50.00	----	----
" 447	----	----	7.00	10.00	13.00	16.00	22.00	28.00	44.00	60.00	145.00	235.00
" 447 No valve	----	----	5.50	8.50	10.50	13.50	18.50	24.00	37.00	49.00	120.00	188.00

Upon application we shall be pleased to submit quotations on special and extra long bell Whistles.

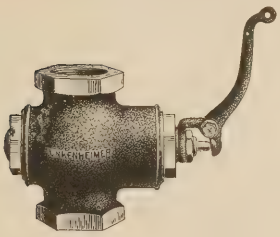


Fig. 691.
AUTOMATIC BALANCED WHISTLE VALVE.

Lunkenheimer Automatic Balanced Whistle Valve.

Where high pressure steam is carried the Lunkenheimer Automatic Balanced Whistle Valve, will be found more serviceable and easily operated than the plain pattern. It is perfectly balanced and may be opened and closed rapidly against the highest pressures with the utmost ease. It is particularly recommended for Marine Service.

Automatic Balanced Whistle Valves.

Size of Valve	1	1¼	1½	2	2½	3
Distance, Face to Face, Screw or Flange Ends, inches	3¾	4 5/16	4⅞	6 7/16	7⅛	7¾
Diameter of Flanges, inches	4	4½	5	6	7	7½
Thickness of Flanges, inch	11/32	⅜	13/32	7/16	15/32	½
Distance, Center of Valve to End of Stem, inches	3⅞	4 5/16	4 11/16	5⅝	6¼	6¾
" " " Port to Cap, inches	2 5/16	2½	2¾	3 7/16	3⅝	4
Screw Ends, each	18.00	22.20	26.60	35.50	44.40	62.20
" and Flange Ends, each	21.40	26.00	31.80	41.80	51.00	74.80
Flange Ends, each	22.20	27.50	33.60	43.80	53.20	77.00

Extra heavy patterns for 350 pounds working pressure can also be furnished.
Prices upon application.

Lunkenheimer Automatic High Pressure Water Gauges.

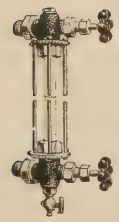
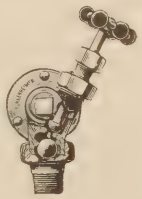


Fig. 589.

This Gauge unlike many other so-called Automatic Water Gauges is supplied with a properly proportioned cage for the ball and does not become clogged by small particles of scale and grit. It is absolutely automatic in closing in case of breaking glass. The operating valves are of the regrinding type and the fittings are so constructed that the Gauge may be used either left or right hand by simply reversing the top and bottom plugs. Gun metal is the composition used in their manufacture and each Gauge is carefully tested before shipping.

Automatic High Pressure Water Gauges.

3 Rod, part finished,	Iron	Wheels,	¾	-in. Glass,	½	-in. Pipe Thread, each			12.00
3 " all "	Wood	"	¾	" "	½	" " "			14.50
3 " part "	Iron	"	¾	" "	¾	" " "			12.00
3 " all "	Wood	"	¾	" "	¾	" " "			14.50



Sectional View of Automatic Valve.

Lunkenheimer Steam Engine Cylinder Lubricators and Oil Pumps.



Fig. 482. "SENIOR."



Fig. 486. "JUNIOR."

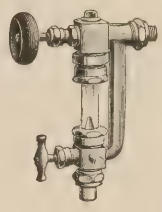


Fig. 494. "INDEPENDENT."

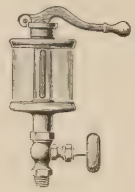


Fig. 495. "REGULAR."

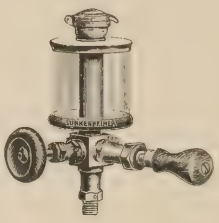


Fig. 853. "UNIVERSAL."

Cylinder Lubricators.

Size, pints	¼	⅓	½	⅔	1	1½	2	4	8
Shank Pipe Thread	⅜	⅜	⅜	½	½	½	½	½	½
Length of Connections, inches	15	18	24	30	36	42	48	60	72
Fig. 482. "Senior"	12.00	15.00	17.00	20.00	22.00	25.00	28.00	38.00	60.00
Connections, extra	.60	.70	.80	1.00	1.20	1.40	1.50	1.60	1.70
Fig. 486. "Junior"	7.00	8.00	10.00	("Junior" ½ pint has ½-inch shank.)					

"Independent" Sight-Feed is made in one size only, with ¼-inch inlet and ⅜-inch outlet.
List each Finished Brass 6.00

Oil Pumps.

No	3	5	6	8
Shank Pipe Thread	⅜	⅜	½	½
Capacity, pints	⅛	½	1	2
Fig. 495	7.50	8.50	10.00	15.00
Size	3a	5a	6a	8a
Fig. 853	7.50	8.50	10.00	15.00

Lunkenheimer Boiler Oil Injector and Gas Engine Cylinder Lubricators for Oil and Graphite.



Fig. 492. "STANDARD" INJECTOR.



Fig. 489. "BANNER."



Fig. 553. "PARAGON."



Fig. 491. "VULCAN."



Fig. 754. "VELOX" GRAPHITE.

Boiler Oil Injector.

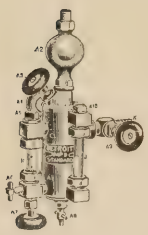
Size, pints	½	1	2	4	8	12	16
Suitable for Boiler, H. P.	10	25	75	100	150	200	250
Fig. 492. "Standard"	7.50	10.00	13.50	16.50	19.50	22.50	30.00

Gas Engine Lubricators.

Size	0	1	1½	2	3	4	5	6	8
Fig. 489. "Banner"	3.50	4.00	----	5.00	6.00	8.00	10.00	12.00	----
" 553. "Paragon"	----	----	2.00	2.80	----	4.00	5.40	7.00	14.00
" 491. "Vulcan"	----	5.00	----	6.00	8.00	10.00	----	----	----
" 754. "Velox"	----	----	----	----	----	2.40	2.70	3.50	5.00

Detroit Lubricators.

Improved Standard.



IMPROVED STANDARD FOR STATIONARY ENGINES.

Description.

A1—Body or Oil Reservoir.
A2—Condenser.
A3—Filler Plug.
A4—Water-Feed Valve Stem.
A5—Plug for inserting Sight-Feed Glass.
A6—Sight-Feed Glass Drain Stem.
A7—Sight-Feed Regulating Valve Stem.
A8—Drain Valve.
A9—Globe Valve in Support Arm.
A10—Plug for inserting Gauge Glass.
H—Sight-Feed Glass.
J—Gauge Glass.
K—Connection to Steam Pipe.

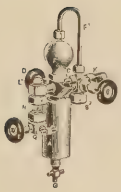
Valve A9 in Support Arm should be in horizontal position as shown in cut when Lubricator is attached to steam pipe.

Improved Standard Sight-Feed Lubricator.

Size	1/3 Pint	1/2 Pint	1 Pint	1 Quart	1/2 Gal.	1 Gal.
Pipe Thread on Support Arm, inches	1/2	1/2	1/2	1/2	3/4	3/4
For Cylinder	Under 10 in.	10 to 12 in.	12 to 18 in.	18 to 30 in.	30 in. and over.	
Brass Finish	17.00	22.00	30.00	45.00	60.00	75.00
Nickel Finish	20.00	25.00	35.00	50.00	65.00	80.00
	Size of Glasses Used.					
Sight-Feed	5/8 x 2 1/16	3/4 x 3	3/4 x 3	3/4 x 3	3/4 x 3 1/4	3/4 x 3 1/4
Gauge	5/8 x 2 1/16	5/8 x 3 1/4	5/8 x 4 5/8	5/8 x 4 5/8	3/4 x 6	3/4 x 7 1/4

Single Connection Style C Lubricator for Traction Engines, Portable Engines, Steam Pumps, Etc.

Can be Connected to Either Horizontal or Vertical Steam Pipe, or Perpendicularly into the Steam Chest.



Style C.
SINGLE CONNECTION.

Description.

A—Oil Reservoir.
B2—Connection for attaching to Steam Chest.
C—Filler Plug.
D—Water-Feed Valve.
E—Regulating Valve.
F—Condensing Chamber.
F1—Equalizing Tube.
G—Drain Valve.
H—Sight-Feed Glass.
L—Plug to insert Glass.
K—Connection to Steam Pipe.
Q—Drain Valve for Sight-Feed Glass.
I—Valve in Support Arm.

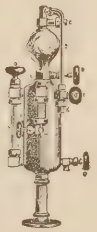
Single Connection Style C Lubricators.

Size	1/4 Pint	1/3 Pint	1/2 Pint	1 Pint	1 Quart
Pipe Thread on Support Arm, inches	1/2	1/2	1/2	1/2	1/2
Brass Finish, each	15.00	17.00	20.00	28.00	42.00
Nickel Plated, "	18.00	20.00	23.00	32.00	47.00

Double Sight-Feed Lubricators for Compound Engines.



A—Oil Reservoir.
C—Extension Top.
D—Water Feed Valve.
EE—Regulating Valves.
F—Condenser.
G—Drain Valve.
HH—Sight-Feed Glasses.
II—Equalizing Valves.
J—Gauge Glass.
KK—Connection to Cylinders.
LL—Plug to insert Glass.
O—Filler Plug.
QQ—Sight-Feed Glass Drain Valves.
SS—Equalizing Tubes.
T—Stand to support Lubricator.



Detroit Double Sight-Feed Lubricators for Compound Engines.

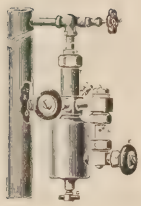
Size.	Double Sight Feed Brass.	Double Sight Feed Nickel.	Triple Sight-Feed. Brass.	Triple Sight-Feed. Nickel.	Quadruple Sight-Feed. Brass.	Quadruple Sight-Feed. Nickel.
Quart	60.00	65.00	----	----	----	----
Half Gallon	75.00	80.00	90.00	95.00	125.00	130.00
Gallon	90.00	96.00	105.00	110.00	150.00	155.00
Stand extra, net	1.25	1.50	1.25	1.50	1.25	1.50

To Operate.—Open Valve D and regulate flow of oil by Valve E.

Detroit Lubricators.

Double Connection Lubricators.

Styles A and C.



Style A.

Description.

C—Filler Plug.
D—Water Valve.
E—Feed Valve.
FF—Condenser and Steam Connections.
G—Drain Valve.
H—Sight-Feed Glass.
K—Oil Discharge Pipe.
L—Plug to insert Glass.
M—Reducing Nozzle in Style C.



Style C.

The Style A and Style C Lubricators are intended for use on stationary engines, traction and portable engines, and steam pumps. They are extra strong and heavy and are finished all over.

The Style A Lubricator should have both connections between the boiler and the throttle.

The Style C Lubricator takes steam for condensation from the boiler direct or from the steam pipe above the throttle, and delivers the oil into the steam pipe below the throttle or into the steam chest.

Size	¼ Pint	⅓ Pint	½ Pint	1 Pint	1 Quart
Pipe Thread on Support Arm, inches	⅜	⅜	⅜	½	½
Brass Finish, each	15.00	17.00	20.00	28.00	42.00
Nickel " "	18.00	20.00	23.00	32.00	47.00

Size of Glass.

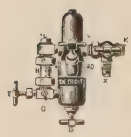
Sight-feed up to ½ pint ..... ¾ x 2⅛
" pint and quart ..... ¾ x 3

Single Connection Lubricators for Small Engines and Steam Pumps.

Styles D and E.

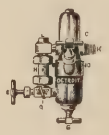
Size of Glass, ⅝ x 1⅝.

Description.



Style D.
WITH REVERSIBLE VALVE.

A—Oil Reservoir.
C—Filler Plug.
D—Water Valve.
E—Regulating Valve.
G—Drain Valve.
H—Sight-Feed Glass.
K—Steam Connection.
Q—Sight-Feed Drain Stem.
X—Reversible Plug for Horizontal or Perpendicular Support.



Style E.
WITHOUT REVERSIBLE VALVE.

These Lubricators are used on small engines and steam pumps. They are heavy and extra strong and not likely to get out of repair.

Size, ⅛ pint, brass, 12.00; nickel, 14.00
Pipe Thread on support arm, inches, ⅜.

Sight-Feed Lubricators for Gas and Gasoline Engines, Air Compressors and Ammonia Cylinders.



GAS ENGINE AND AIR COMPRESSOR LUBRICATOR.*

A.—Oil Reservoir.
C—Filler Plug.
D—Valve to control admission of gas or air.
E—Feed Valve, with stop-feed feature.
H—Sight-Feed Glass.
K—Connection in Cylinder.
L—Plug to insert glass.

Size of Glass, ⅝ x 2 1/16.

Our Gas Engine and Air Compressor Lubricator is made of the best brass and is connected to the cylinder direct.

For large gas engines and powerful air compressors we make a specially strong Lubricator of this pattern.

The ½ pint and larger sizes can be furnished with gauge glass, if so desired, at a slight additional cost.

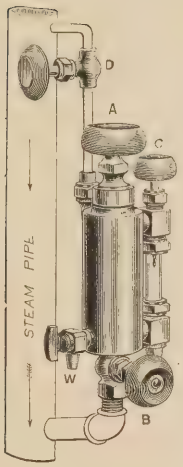
Directions for Operating.

Regulate pressure by valve D and flow of oil by valve E. Valve E may be shut off at any time and opened again without disturbing the feed.

Size	¼ Pint	⅓ Pint	½ Pint	Pint	Quart
Pipe Thread on Support Arm, inches	¼	½	½	½	½
Brass Body Finished	15.00	17.00	20.00	28.00	42.00
Nickel Plated all over	18.00	20.00	23.00	32.00	47.00

* This Lubricator is also adapted for Lubricating Ammonia Cylinders and is sold under same list.

Improved "Handy" Drop-Feed Lubricators for Stationary and Portable Engines of All Kinds, Steam Pumps, etc.



Nos. 1 and 2.
WITHOUT OIL GAUGE.

Directions for Application.

1. Attach the cup to main steam pipe as close as possible by a short nipple and elbow at the bottom, taking care the angle does not sag.

2. Connect the valve, accompanying the lubricator, to the little elbow on top of cup, and to the main steam pipe by ⅛-inch pipe, in the most convenient position.

Directions for Use.

Fill the cup through filling plug A with clean strained oil.

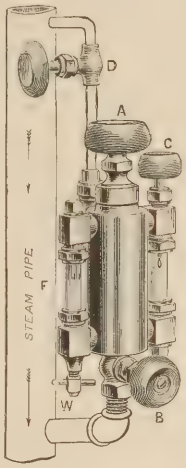
To START.—Open bottom steam valve B ½ turn, and top steam valve D wide, then after waiting a few minutes open valve C, when the drop will fall down in sight-feed glass.

Regulate the feed by valve C, according to size of engine, but not to exceed 50 drops per minute.

To STOP.—Close valves C and B.

When the cup is empty, close all valves and draw off condensed water and impurities by waste cock W; then fill and start as before.

A—Filling Plug. B—Bottom Steam Valve. C—Regulating Valve. D—Top Steam Valve. W—Waste Cock. F—Gauge Glass.



Nos. 3 to 7.
WITH OIL GAUGE.

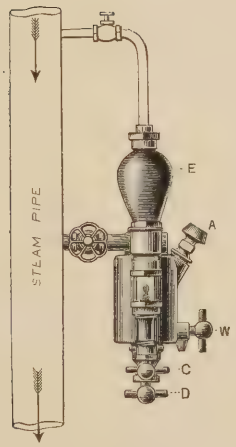
These Cups have been specially designed to meet the popular demand for a thoroughly reliable sight-feed Lubricator, at moderate cost.

The supply of oil is propelled through the sight-feed glass by an improved process of steam condensation, and may be regulated to feed fast or slow according to the demands of the engine. The above cuts represent them as applied to the steam pipe, which is the best and most convenient position. Sizes above and including No. 3 are provided with a gauge glass, to show at all times the quantity of oil remaining in cup.

No	1	2	3	4	5	6	7
Approximate Capacity in Pints	¼	⅓	½	¾	1	1½	2
Price with Sight Glass Only	8.00	10.00	----	----	----	----	----
" " " and Oil Gauge Glass	----	----	14.00	16.00	18.00	24.00	30.00

In ordering these Lubricators please use the term Improved "Handy."

The "Volunteer" Up-Drop Sight-Feed Lubricator for Stationary Engines and Pumps of All Kinds.



THE VOLUNTEER DOUBLE CONNECTION LUBRICATOR.

Directions for Application.

1. Connect the Lubricator to main steam pipe by the oil discharge shank G, placing a common globe valve between the Lubricator and steam pipe, so as to be able to turn steam off should glass break at any time, also a globe valve B at bend of top pipe to connect to condenser.

2. The connection between shank G and main steam pipe must be above the throttle, so that pressure will remain on the cup when throttle is closed.

Directions for Use.

Fill the cup with clean strained oil through filling plug A, then open valves B and D; wait till sight-feed glass has filled with water of condensation, then start and regulate the feed by valve C.

To STOP.—Close valve C.

When the cup is empty close valves C and D, and draw off water by waste-cock W; then fill and start as before, always opening valve D first.

Notes.

1. In case the sight-feed glass breaks, close valves B and C and valve between shank G, and steam pipe, and remove the broken glass by unscrewing the plug at the top of it and slipping the glass through.

2. Keep valve D always open, except when draining the cup, as per directions.

No	1	2	3
Capacity	⅓ pint	½ pint	¾ pint
Price, Bronze Dipped	10.00	12.00	15.00

The "Wizard" Single Connection Sight-Feed Lubricator for Dynamos and Stationary Engines and Pumps.

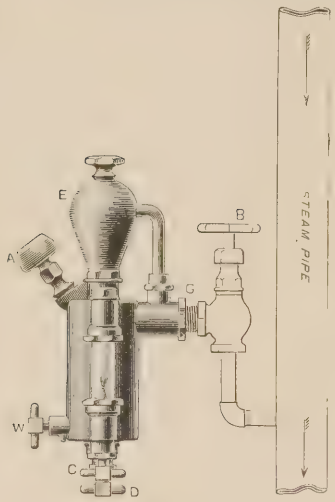


Fig. 1.

Instructions.

1. Connect the Lubricator to main steam pipe by means of nipple and elbow, placing an angle valve between Lubricator and pipe, as illustrated.

2. Connect to steam chest (if the first method is not convenient) by means of a stand pipe long enough to clear top of steam chest.

Fill the cup with clean strained oil through filling plug A, then open valves B and D. Wait until sight-feed glass has filled with water of condensation, then start and regulate the feed by valve C.

To Stop.—Close valve C.

When the Cup is empty, close valves C and D, and draw off water by waste cock W, then fill and start as before, always opening valve D first.

A—Filling Plug. B—Steam Valve. C—Regulating Valve. D—Water Valve. E—Condenser. W—Waste Cock.

This new Lubricator will meet the demand for a thoroughly reliable, single connected Lubricator, which will work on either side of the throttle—connected to steam pipe, or to steam chest and cylinder. By the peculiar connection of the condenser with the delivery shank, a perfect circulation is established, preventing what is called among engineers the "plugging" of the cup, which is one of the great drawbacks to the success of most of this class of Lubricators. Fig. 1 is made of rough brass with sight-feed glass only, and embraces but the three smallest sizes. Fig. 2 is of finished brass, nickel plated, and furnished with sight-feed and oil gauge glasses. This style embraces all sizes made. Both Lubricators in all other respects are alike and work in the same manner.

1. In case the sight-feed glass breaks, close valves B and C, and remove the broken glass by unscrewing the plug at the top of bracket, and slipping the glass through. In the same way, the indicating glass can be removed in case of breakage.

Keep valve D always open, except when draining the cup as per directions.

Fig. 1. Nos.	1	2	3
Size and Capacity	⅓ Pint	½ Pint	⅔ Pint
Price, Bronze Dipped	10.00	12.00	15.00

Fig. 2. Capacity	⅓ Pint	½ Pint	¾ Pint	1 Pint	1½ Pint	1 Quart
Price, Nickel Plated	16.00	20.00	24.00	30.00	36.00	44.00

In ordering these Lubricators, please use the name "Wizard."

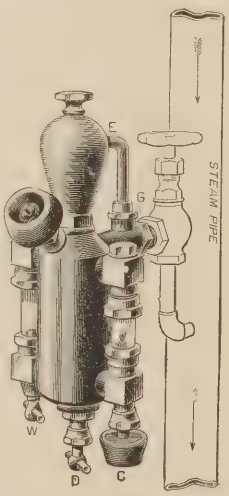
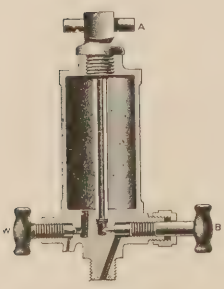


Fig. 2.

Self-Acting Lubricator for Steam Automobiles.



SECTIONAL VIEW.

While the machinery is in motion, steam passes through the center tube to the upper part of the Lubricator, where it condenses. The water produced by this condensation, being heavier than the oil, sinks to the bottom of the cup, raising a corresponding amount of the lubricant upward, and causing it to overflow through the open top of said center tube, to the parts where lubrication is required.

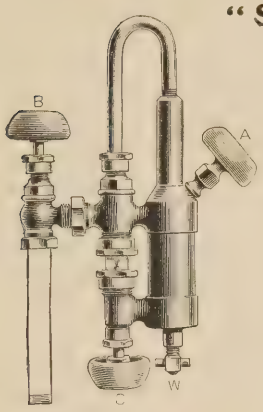
Directions.

Screw the Lubricator into the steam chest. Fill with clean strained oil through filling plug "A," and regulate feed by means of steam valve "B." When the cup is fed out, drain it (of the water of condensation, acids and other impurities which remain) by means of waste cock "W," then re-fill, and start as before.

Capacity	2 Ounces	4 Ounces	8 Ounces
Each	8.00	16.00	24.00

Threaded ⅜ or ½ inch, as required. Larger sizes on application.

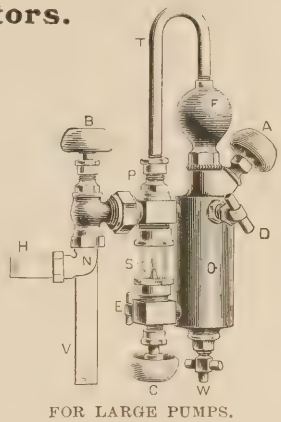
"Simplex" Sight-Feed Lubricators.



FOR SMALL PUMPS.

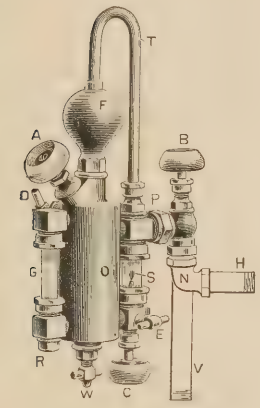
A—Filling Plug. B—Steam Valve. C—Regulating Valve. D—Water Valve. E—Drain Valve for Sight-Feed Glass. F—Condensing Chamber. O—Oil Reservoir. P—Plug to insert Sight-Feed Glass. S—Sight-Feed Glass. H—Connection to Steam Pipe (horizontal). V—Connection to Steam Chest (vertical). W—Drain Valve.

Capacity, pints	⅛	¼	⅓	½	¾	1
Each	10.00	12.00	14.00	18.00	22.00	27.00



FOR LARGE PUMPS.

"Duplex" Sight-Feed Lubricator.



DUPLEX SIGHT-FEED LUBRICATOR.

A—Filling Plug. B—Steam Valve. C—Regulating Valve. D—Water Valve. E—Drain Valve for Sight-Feed Glass. F—Condensing Chamber. G—Oil Gauge. O—Oil Reservoir. P—Plug to insert Sight-Feed Glass. R—Plug to insert Oil Gauge. S—Sight-Feed Glass. H—Connection to Steam Pipe (horizontal). V—Connection to Steam Chest (vertical). W—Drain Valve.

Capacity, pints	⅓	½	¾	1	1½	2
Each	16.00	20.00	24.00	30.00	36.00	44.00

"Simplex" and "Duplex" Lubricators.

These Lubricators may be applied to horizontal or to vertical pumps and engines. For use on horizontal pumps or pipes, or on the steam chest direct, apply by vertical connection V; for use on vertical pumps or pipes, apply by elbow N, or horizontal connection H.

The Lubricator may be converted into a "double-connected" one by removing pipe T, placing a solid disc into the nut on top of plug P, and connecting the top of Condensing Chamber F with the main steam pipe by means of a new pipe T, carrying this latter at least 18 inches upward, and placing a valve between it and the main steam pipe. In such cases, the horizontal connection H (also to the main steam pipe) is recommended for a second connection.

Instructions.

Fill Reservoir O through Plug A, and immediately after open valves B and D. Allow sufficient time for Condensing Chamber and Sight-Feed Glass to fill with water, before starting the Lubricator. Regulate feed of oil with valve C.

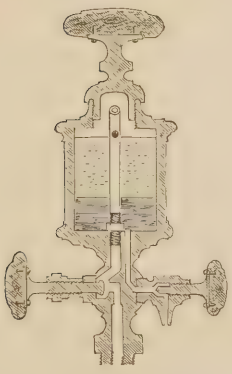
To Stop Feeding: Close valve C.

To Renew Supply of Oil: Close valves B, C and D, drain the reservoir by valve W, then fill and start as before, always opening valve D immediately after filling.

Valve D must always be open, excepting only when draining or filling the reservoir as above. Where there is danger of freezing, when the Lubricator is not in use, valves D and W, and the drain valve E under the Sight-Feed Glass should be left open.

These Lubricators will be furnished either brass polished or nickel plated, as may be desired.

Standard Self-Acting Lubricators for Steam Chests and Cylinders of all Kinds and Sizes.



INTERIOR VIEW.

Directions for Use.

Screw the cup on the top of the steam chest, or on the steam pipe.

Fill it with oil or melted tallow up to the side hole of the inside tube; then open the valve about one-quarter, and it is ready for use.

Operation.

While the engine is in motion, the steam passes up the tube to the upper part of the cup, where it condenses, and the water so produced being heavier than the oil, sinks to the bottom, and lifts an equal amount of the lubricant to the top, causing it to overflow through the side hole near the top of the tube to the parts where the lubrication is required.

When the oil or tallow is exhausted, water, acids and other impurities which remain, should be drawn off by the waste cock, and the cup be re-filled with the lubricant.

Diameter	1	1½	2	2½	3	3½	4	5	6	7
Capacity, pints	1/16	⅛	⅓	½	¾	1	2	3	5	7
Plain, each	3.00	4.50	6.00	8.00	10.00	13.00	16.00	----	----	----
With Cross Handle, heavy	----	----	----	----	14.00	18.00	21.00	----	----	----
With Yoke, heavy	----	----	----	----	16.00	----	24.00	33.00	42.00	54.00

The Cam Oiler.



Series 480.
SKELETON FRAME.

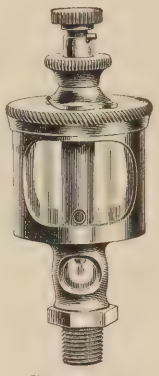
Directions for Setting the Feed and Working the Cam Oiler.

Loosen the locknut on the top cover, and turn the spindle to the right or left by means of the knob on top until the desired rate of feed is obtained, then tighten the locknut. This will lock the cam in the desired position. The central valve stem is then seated or unseated for stoppage or feed by lowering or raising it on the cam.

The thread in locknut and on cam spindle is left handed.

Description of the Cam Oiler.

The cuts represent an extremely simple and convenient oiler, in which the supply of oil may be shut off or turned on without disturbing the rate of feed, to which the cup may have been previously set. The regulation of the feed is effected by a plain central screw spindle, and the seating and unseating of the valve is done by simply turning the top knob, thereby lowering or raising the spindle on the central cam. They are provided with Ball Shank Sight Feed Openings protected by glass, through which the flow of oil is visible at all times, and a filling hole in the top of the cap fitted with a movable cover.



Series 560.
SHELL CASED.

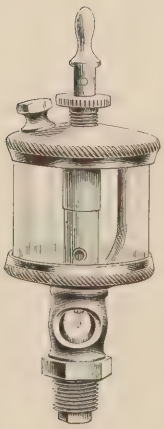
Series 480.

No.	Height of Cup Complete.	Width of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Price, Doz.
484	5	1¾	1	¼	18.00
485	5⅛	1⅞	1½	¼	21.00
486	5½	2⅛	2	⅜	24.00
487	6⅛	2½	4	⅜	27.00
488	7	2⅞	6	⅜	32.00
489	7¼	3⅜	10	½	40.00
490	8½	3¾	15	½	54.00
491	9	4¼	24	½	84.00
492	9¾	4⅞	36	½	120.00

Series 560.

No.	Height of Cup Complete. (Estimated.)	Width of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Price, Doz.
564	5¼	1¾	1	¼	21 00
565	6	1⅞	1½	¼	27.00
566	6½	2⅛	2	⅜	30.00
567	7¼	2½	4	⅜	33.00
568	8⅛	2⅞	6	⅜	40.00
569	8½	3⅜	10	½	54.00
570	9¼	3¾	15	½	72.00
571	10	4¼	24	½	108.00
572	11	4⅞	36	½	168.00

"Signal" Stop and Screw Setting Sight-Feed Oiler for Gas, Gasoline and Oil Engines.



"SIGNAL UP."
Cup Feeding.

Series 720.

To Set the Feed.—Raise the "Signal" Lever and simply turn the milled wheel to the right or left, until the desired speed of feed is obtained.

To Stop the Feed.—Lower the "Signal" Lever. This will not interfere with the setting of the regulator, which remains undisturbed. A sudden flush of oil ("feeding a stream") may be obtained by setting the "Signal" Lever at an angle of about 45 degrees.

When it is desired, the filling knob may be secured to the cup by chain, which will prevent its being lost.

This new and most efficient oil cup has been placed upon the market for the purpose of meeting the demand for a low-priced and serviceable lubricator for gas and similar engines. It combines simplicity of operation with the most convenient means for shutting off lubrication, without disturbing the set rate of the feed.

These cups are provided with ball check valves at the bottom of the shanks, which will prevent any excessive pressure from entering the cup.



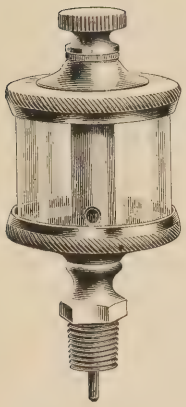
"SIGNAL DOWN."
Feed Stopped.

No.	Height of Cup Complete. "Signal Up."	Diameter of Cup, Complete.	Capacity in Ounces.	Pipe Thread.	Price Dozen.
726	5¾	2 3/16	2	⅜	30.00
727	6 5/16	2⅝	4	⅜	36.00
728	7 5/16	2 15/16	6	⅜	42.00
729	7 11/16	3⅜	10	½	54.00

No.	Height of Cup Complete. "Signal Up."	Diameter of Cup, Complete.	Capacity in Ounces.	Pipe Thread.	Price, Dozen.
730	8 9/16	3 13/16	15	½	72.00
731	10⅛	4 5/16	24	½	108.00
732	10⅞	4 15/16	36	½	168.00

Nickel Plated Oilers—Skeleton Frame.

For Shafting and Engines.



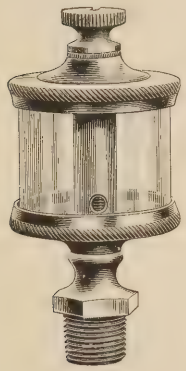
Series 100.
WITH WIRE FEED.

Wire Feed.

These Cups are provided with a hollow tube, inside of which is placed a loose-acting solid or hollow wire, which acts as a feeder and regulator. The Cup is fixed on the bearing, and the wire rests upon the journal, thereby acting with the shaft in its motion. The wire is also regulated inside the tube so as to feed according to the demand only. There is no flow of oil whatever while the machinery is not in motion. They are as reliable in Winter as in Summer. Being perfectly air-tight vessels, the oil will never gum in them.

Series 100.

No.	101	102	103	104	105	106	107	108	109	110	111	112
Height Cup Complete	2¾	3	3¼	3¾	4	4⅛	4¾	5¾	6¼	6¾	7½	8¼
Width "	1⅛	1¼	1⅜	1¾	1⅞	2⅛	2½	2⅞	3⅜	3¾	4¼	4⅞
Capacity in Ounces	¼	⅜	½	1	1½	2	4	6	10	15	24	36
Pipe Thread	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½	½	½
Per dozen	8.00	9.00	10.00	11.00	12.00	14.00	17.00	21.00	27.00	36.00	54.00	84.00



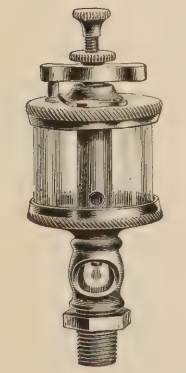
Series 120.
PLAIN, WITH SLOTTED SCREW FEED.

Slotted Screw Feed.

In these Cups the supply of oil is regulated by means of a graduating slotted heavy brass wire, and is capable of being increased or diminished with the utmost precision by adjusting this wire, which extends upwards through the center of the Cup, and is easily reached by removing the knob. A slot in the knob enables the latter to be used as a wrench, to adjust the regulating screw to the desired point.

Series 120.

No.	121	122	123	124	125	126	127	128	129	130	131	132
Height Cup Complete	2¾	3	3¼	3¾	4	4⅛	4¾	5¾	6¼	6¾	7½	8¼
Width "	1⅛	1¼	1⅜	1¾	1⅞	2⅛	2½	2⅞	3⅜	3¾	4¼	4⅞
Capacity in Ounces	¼	⅜	½	1	1½	2	4	6	10	15	24	36
Pipe Thread	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½	½	½
Per dozen	8.00	9.00	10.00	11.00	12.00	14.00	17.00	21.00	27.00	36.00	54.00	84.00



Series 180.
WITH STOP AND SIGHT FEED.

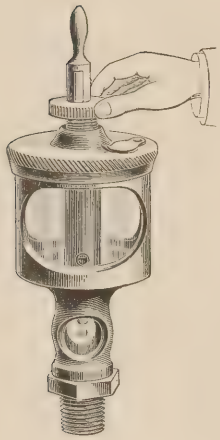
Stop and Sight Feed.

In these Cups the feed is controlled by a plain screw-threaded spindle, which is turned to the right or left, according to the feed desired. The spindle is kept in position by means of a locknut between the knob of the regulating spindle and a cross bar, against which the locknut sets. The supply of oil may be shut off or turned on instantly, without disturbing the rate of feed, by the seating or unseating of the small pin at one end of the cross bar in the socket on the top of the Cup. These Cups are provided with sight openings, protected by glass tubes, through which the flow of oil is visible at all times. There is a filling hole in the top of the Cup, fitted with a movable cover, which acts at the same time as a ventilator to keep up a proper circulation of air in the oil chamber.

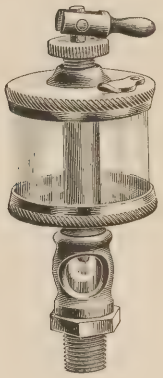
Series 180.

No.	184	185	186	187	188	189	190	191	192
Height Cup Complete	4¾	5	5⅛	5¾	6¾	7¼	7¾	8½	9¼
Width "	1¾	1⅞	2⅛	2½	2⅞	3⅜	3¾	4¼	4⅞
Capacity in Ounces	1	1½	2	4	6	10	15	24	36
Pipe Thread	¼	¼	⅜	⅜	⅜	½	½	½	½
Per dozen	18.00	21.00	24.00	27.00	32.00	40.00	54.00	84.00	120.00

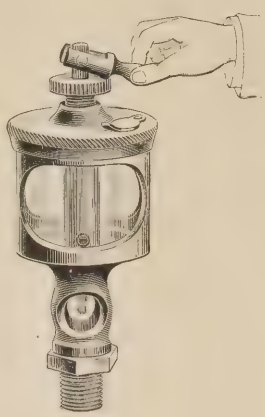
The "Signal" Pattern Stop and Sight-Feed Oilers.



Series 900.
SHELL CASED.
Signal Up, Cup Feeding.



Series 800.
SKELETON FRAME.
Signal Down, Feed Stopped.



Series 900.
SHELL CASED.
Signal Set for Flush Feed.

Directions for Setting Feed.

Raise the "Signal" Lever, and turn the knurled knob until the desired speed of feed if obtained.

To stop the Feed, lower the "Signal" Lever.

A sudden flush of oil, i. e., "feeding a stream," may be obtained by setting the "Signal" Lever at an angle of about 45 degrees as shown.

The attention of engine builders and the trade in general is called to the new "Signal" Stop and Sight-Feed Oilers, illustrated above. These cups are of the so-called plain "Screw-Feed" style and the rate of feed may be increased or lessened by the simple turning, to the right or to the left, as shown, of a knurled knob. The spindle is held in position by a notched catch inside the central tube, so that the vibration or jarring of the engine can neither loosen it, nor interfere with the rate of feed. The result of this arrangement is such that the oiler may be set to feed a certain amount of oil within a given time, and may be relied upon to maintain this rate of feed until same be changed at will. By means of the "Signal" Lever the feed may be started or stopped without disturbing the rate of lubrication, when once set at a certain speed.

Shell Cased.

Series 900.

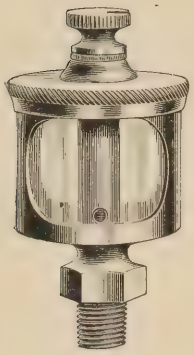
No.	Height of Cup Complete. Signal Up	Diameter of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Per Dozen.
903	$4\frac{7}{16}$	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{8}$	18.00
904	$5\frac{1}{8}$	$1\frac{15}{16}$	1	$\frac{1}{4}$	21.00
905	$5\frac{3}{8}$	$2\frac{1}{8}$	$1\frac{1}{2}$	$\frac{1}{4}$	27.00
906	$5\frac{3}{4}$	$2\frac{5}{16}$	2	$\frac{3}{8}$	30.00
907	$6\frac{3}{16}$	$2\frac{11}{16}$	4	$\frac{3}{8}$	33.00
908	$7\frac{3}{16}$	$3\frac{1}{8}$	6	$\frac{3}{8}$	40,00
909	8	$3\frac{1}{2}$	10	$\frac{1}{2}$	54.00
910	9	$3\frac{15}{16}$	15	$\frac{1}{2}$	72.00
911	$10\frac{1}{8}$	$4\frac{3}{8}$	24	$\frac{1}{2}$	108.00
912	$10\frac{7}{8}$	$5\frac{1}{16}$	36	$\frac{1}{2}$	168.00

Skeleton Frame.

Series 800.

No.	Height of Cup Complete. Signal Up.	Diameter of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Per Dozen.
803	$4\frac{5}{16}$	$1\frac{7}{16}$	$\frac{1}{2}$	$\frac{1}{8}$	16.00
804	$5\frac{1}{4}$	$1\frac{13}{16}$	1	$\frac{1}{4}$	18.00
805	$5\frac{3}{8}$	2	$1\frac{1}{2}$	$\frac{1}{4}$	21.00
806	$5\frac{3}{4}$	$2\frac{3}{16}$	2	$\frac{3}{8}$	24.00
807	$6\frac{5}{16}$	$2\frac{5}{8}$	4	$\frac{3}{8}$	27.00
808	$7\frac{5}{16}$	$2\frac{15}{16}$	6	$\frac{3}{8}$	32.00
809	$7\frac{11}{16}$	$3\frac{3}{8}$	10	$\frac{1}{2}$	40.00
810	$8\frac{9}{16}$	$3\frac{13}{16}$	15	$\frac{1}{2}$	54.00
811	$10\frac{1}{8}$	$4\frac{5}{16}$	24	$\frac{1}{2}$	84.00
812	$10\frac{7}{8}$	$4\frac{15}{16}$	36	$\frac{1}{2}$	120.00

Adjustable Screw Feed Oilers—Shell Cased.



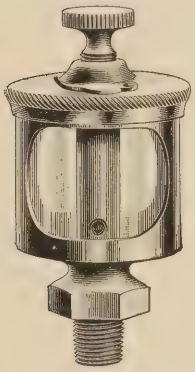
Series 200.
PLAIN SLOTTED SCREW FEED.

Plain Slotted Screw Feed.

In these Cups the supply of oil is regulated by means of a graduating slotted heavy brass wire, and is capable of being increased or diminished with the utmost precision by adjusting this wire, which extends upwards through the center of the Cup, and is easily reached by removing the knob. A slot in the knob enables the latter to be used as a wrench, to adjust the regulating screw to the desired point.

Series 200.

No.	Height of Cup Complete.	Width of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Per dozen.
201	3¼	1¼	¼	⅛	10.00
202	3½	1⅜	⅜	⅛	12.00
203	3⅝	1½	½	⅛	13.00
204	4	1¾	1	¼	14.00
205	4⅜	2	1½	¼	16.00
206	4¾	2⅛	2	⅜	20.00
207	5¼	2⅝	4	⅜	24.00
208	5¾	3	6	⅜	30.00
209	6⅛	3½	10	½	40.00
210	7	3¾	15	½	54.00
211	7¾	4⅜	24	½	84.00
212	8½	5	36	½	120.00



Series 220.
PLAIN TAPER SCREW FEED.
Outside Regulation.

Plain Taper Screw Feed.

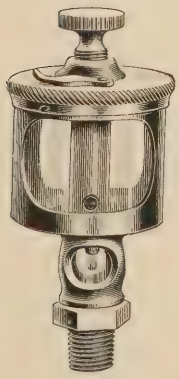
The flow of oil from this Cup is regulated by screwing or unscrewing the knob on top of the Cup, which is connected with the outlet by a tapering screw.

This style of Cup is also provided with an opening in the top, protected by a sliding cover, which can be moved aside when it is required to renew the supply of oil, and when shut admits sufficient air to maintain a proper degree of circulation to keep the pressure uniform and facilitate the flow of oil.

Series 220.

No.	Height of Cup Complete.	Width of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Per dozen.
221	3¼	1¼	¼	⅛	10 00
222	3½	1⅜	⅜	⅛	12.00
223	3⅝	1½	½	⅛	13.00
224	4	1¾	1	¼	14.00
225	4⅜	2	1½	¼	16.00
226	4¾	2⅛	2	⅜	20.00
227	5¼	2⅞	4	⅜	24.00
228	5¾	3	6	⅜	30.00
229	6⅛	3½	10	½	40.00
230	7	3¾	15	½	54.00
231	7¾	4⅜	24	½	84.00
232	8½	5	36	½	120.00

Outside Adjustable Screw Feed Oilers with Sight Feed—Shell Cased.



Series 240.
TAPER SCREW, Filling Hole and Ball Shank Sight Feed.

Taper Screw, Filling Hole, Ball Shank and Sight Feed.

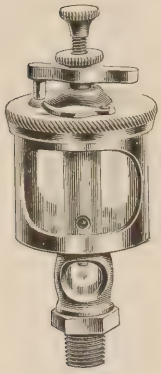
This style is made with openings in the shanks, protected with glass, to show the oil drop as it leaves the Cup. The engineer is thus enabled to see the progress of feeding, and regulate the flow according to the demand. This is done by screwing or unscrewing the knob on top of the Cup which is connected with the outlet by a tapering screw.

This style of Cup is also provided with an opening in the top, protected by a sliding cover, which can be moved aside when it is required to renew the supply of oil, and when shut admits sufficient air to maintain a proper degree of circulation to keep the pressure uniform and facilitate the flow of oil.

Series 240.

No.	Height of Cup Complete.	Width of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Per dozen.
244	4½	1¾	1	¼	16.00
245	4¾	2	1½	¼	19.00
246	5½	2¼	2	⅜	24.00
247	6	2⅝	4	⅜	27.00
248	6¾	3	6	⅜	33.00
249	7⅛	3½	10	½	45.00
250	8	3¾	15	½	60.00
251	8¾	4⅜	24	½	90.00
252	9½	5	36	½	144.00

Stop and Sight Feed Oilers—Shell Cased.



Series 260.
WITH STOP AND SIGHT FEED.

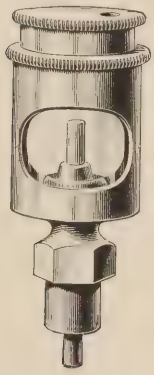
In these Cups the feed is controlled by a plain screw-threaded spindle which is turned to the right or to the left, according to the feed desired. The spindle is kept in position by means of a locknut between the knob of the regulating spindle and a cross-bar, against which the locknut sets.

The supply of oil may be shut off or turned on instantly, without disturbing the rate of feed, by the seating or unseating of the small pin at one end of the cross-bar in the socket on top of the Cup. These Cups are provided with sight openings, protected by glass tubes, through which the flow of oil is visible at all times. There is a filling hole in the top of the Cup, fitted with a movable cover, which acts at the same time as a ventilator to keep up a proper circulation of air in the oil chamber.

Series 260.

No	264	265	266	267	268	269	270	271	272
Height of Cup, Complete	4½	4¾	5½	6⅛	6¾	7⅛	8	8¾	9½
Width of Cup, "	1¾	2	2⅛	2⅝	3	3½	3¾	4⅜	5
Capacity in Ounces	1	1½	2	4	6	10	15	24	36
Pipe Thread	¼	¼	⅜	⅜	⅜	½	½	½	½
Per dozen	21.00	27.00	30.00	33.00	40.00	54.00	72.00	108.00	168.00

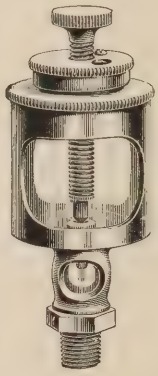
Sliding Top Engine Oilers—Shell Cased.



Series 300.
WIRE FEED.



Series 320.
PLAIN TAPER SCREW FEED.



Series 340.
WITH BALL SHANK SIGHT FEED.

The Sliding Top Oiler derives its name from its peculiarly constructed filling arrangement. This consists of a cap with a hole in it, which by means of a common screw motion slides over the flat fixed cover of the Cup, exposing or covering, whenever necessary, a corresponding opening in the latter through which the Cup is filled.

By this arrangement the sliding cover is kept absolutely tight, and prevents the leakage of oil, especially when applied on crank pins of high-speed engines. The sliding top can never get loose, being kept in position by a stop which allows it only the necessary play,

They are made in two styles, namely, with wire feed, and regulating screw, whichever may be desired. The latter style is also made with a Ball Shank Sight Feed Attachment, protected with glass, which enables the engineer to note the progress of feeding and regulate the supply accordingly. This type of Cup is excellent for crank pins. The sizes and prices of Series 300 and 320 are alike.

Wire Feed, or Plain Screw.

Series 300 and 320.

No	301	302	303	304	305	306	307	308	309	310	311	312
	321	322	323	324	325	326	327	328	329	330	331	332
Extreme Height	2⅞	3⅛	3¼	3⅝	4	4⅛	4¾	5¼	5⅝	7	7¼	8
Extreme Width	1¼	1⅜	½	1⅞	2	2¼	2½	3	3½	3⅞	4⅜	5
Capacity in Ounces	¼	⅜	½	1	1½	2	4	6	10	15	24	36
Pipe Thread	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½	½	½
Per dozen	12.00	14.00	16.00	18.00	20.00	24.00	30.00	36.00	48.00	66.00	90.00	120.00

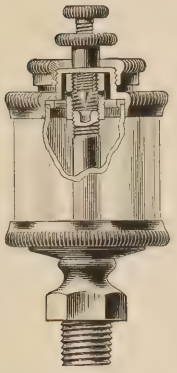
With Ball Shank Sight Feed.

Series 340.

No	344	345	346	347	348	349	350	351	352
Extreme Height	4¼	4⅞	5¼	5½	6¼	6⅝	8	8¼	9
Extreme Width	1⅞	2	2¼	2½	3	3½	3⅞	4⅜	5
Capacity in Ounces	1	1½	2	4	6	10	15	24	36
Pipe Thread	¼	¼	⅜	⅜	⅜	½	½	½	½
Per dozen	20.00	24.00	30.00	36.00	42.00	54.00	72.00	96.00	144.00

Crank Pin and Engine Oilers.

New Crank Pin Oiler.



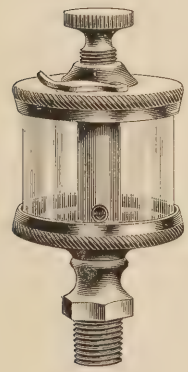
Series 620.
CRANK PIN OILER.

This Cup has been designed for the efficient and economical lubrication of Crankpins, by means of an oiler directly attached to same. The oil is thrown into the center tube through openings near its top, while the rate of feed is regulated by means of a needle pointed screw spindle held firmly in place by a locknut. The "sliding top" is a valuable feature, and consists of a cap with a hole in it which, by a common screw motion slides over the flat fixed cover of the Cup, exposing or covering, when necessary, a corresponding opening in said cover, through which the Cup is filled with oil. By this arrangement the sliding cover is kept absolutely tight and prevents the leakage of oil, especially when applied on crank pins of high speed engines. The sliding top cannot get loose, being kept in position by a stop which allows it only the necessary play.

Series 620.

Number	622	623	624	625	626	627	628	629	630	631	632
Capacity in ounces	3/8	1/2	1	1 1/2	2	4	6	10	15	24	36
Pipe thread	1/8	1/8	1/4	1/4	3/8	3/8	3/8	1/2	1/2	1/2	1/2
Per dozen	16.00	18.00	21.00	27.00	30.00	33.00	40.00	54.00	72.00	108.00	168.00

Plain Taper Screw Engine Oiler, Outside Adjustment, Skeleton Frame.

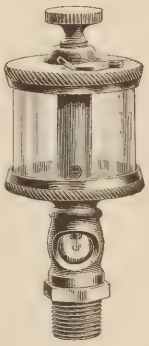


Series 140.
PLAIN TAPER SCREW FEED.

These Cups contain no parts liable to get out of order, nor do they require special attention in handling or application; therefore they are reliable under all circumstances. They are further provided with an opening in the top, with a movable cover, through which they may be filled, and which also acts when shut (which it should always be, except in the act of filling) as a vent sufficient to keep a proper degree of circulation of air in the Cup to make the pressure uniform and facilitate the flow of oil.

No.	Height.	Width.	Capacity Ounces.	Pipe Thread.	Per Dozen.
141	2 3/4	1 1/8	1/4	1/8	8.00
142	3	1 1/4	3/8	1/8	9.00
143	3 1/4	1 3/8	1/2	1/8	10.00
144	3 3/4	1 3/4	1	1/4	11.00
145	4	1 7/8	1 1/2	1/4	12.00
146	4 1/8	2 1/8	2	3/8	14.00
147	4 3/4	2 1/2	4	3/8	17.00
148	5 3/4	2 7/8	6	3/8	21.00
149	6 1/4	3 3/8	10	1/2	27.00
150	6 3/4	3 3/4	15	1/2	36.00
151	7 1/2	4 1/4	24	1/2	54.00
152	8 1/4	4 7/8	36	1/2	84.00

Plain Taper Screw Engine Oiler, With Sight Feed, Skeleton Frame.



Series 160.
TAPER SCREW AND SIGHT FEED

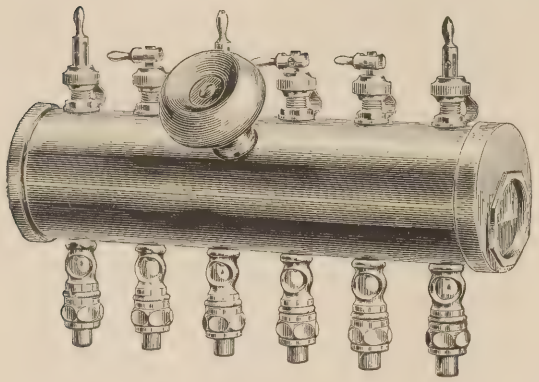
This style of Cup is made with openings in Ball Shanks, protected by glass, to show the oil drop as it leaves the Cup. This enables the engineer to see the progress of feeding, and regulate flow according to the required demand. They are further provided with an opening in the top, having a movable cover, through which they may be filled, and which also acts when shut (which it should always be, except in the act of filling) as a vent sufficient to keep a proper degree of circulation of air in the Cup to make the pressure uniform and facilitate the flow of oil.

Taper Screw, Filling Hole and Ball Shank Sight Feed.

Series 160.

No.	Height of Cup Complete.	Width of Cup Complete.	Capacity in Ounces.	Pipe Thread.	Per Doz.
161	3 1/4	1 3/16	1/4	1/8	10.00
162	3 3/8	1 5/16	3/8	1/8	11.00
163	3 9/16	1 7/16	1/2	1/8	12.00
164	4 1/4	1 3/4	1	1/4	13.00
165	4 7/8	1 7/8	1 1/2	1/4	15.00
166	5 3/8	2 1/8	2	3/8	17.00
167	5 5/8	2 1/2	4	3/8	20.00
168	6 3/4	2 7/8	6	3/8	24.00
169	7 1/4	3 3/8	10	1/2	32.00
170	7 3/4	3 3/4	15	1/2	44.00
171	8 1/2	4 1/4	24	1/2	60.00
172	9 1/4	4 7/8	36	1/2	96.00

Multiple Oiler for Bearings of Steam Engines, Dynamos, Marine Engines, Etc.



This style of Oil Tank or "Multiple Feeder" will be found particularly useful for service on high-speed engines, but will be found well adapted for all places where a number of bearings are to be oiled from one vessel or reservoir, located in some convenient place. The sight-feeds are patterned after our well-known "Signal" style of oil regulating device, which may be quickly adjusted to furnish any desired speed or flow of the lubricant, while the feed may be started or shut off by simply raising or lowering the "Signal" Lever at the top.

This "Multiple Oiler" is made in two standard sizes, No. 1 of 1½-pint capacity, and No. 2 of 2½-pints capacity.

Size No. 1 of 1½-pint capacity may be furnished with from two to six feed outlets; while size No. 2 of 2½-pints capacity may be furnished with from six to ten feed outlets.

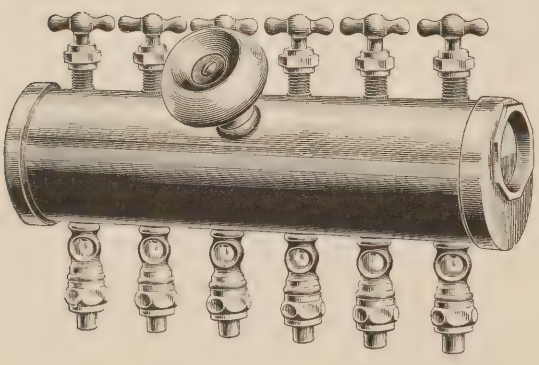
The unions at the bottom of the sight-feeds are tapped for $\frac{5}{16}$-inch tube, 27 threads per inch, unless otherwise ordered; but will be furnished either male or female, threaded or plain, if so specified upon ordering.

"Multiple Oiling Tanks" of larger capacity and with a greater number of sight-feeds may be furnished. In such cases, the outside dimensions, or capacity in pints, and the number of sight-feeds, should be specified.

These "Multiple Oilers" will be furnished either "brass polished" or "nickel-plated," as may be desired.

Size 1,	No. of Feeds	2	3	4	5	6
1½ pints.	Each	16.00	18.00	20.00	22.00	24.00
Size 2,	No. of Feeds	6	7	8	9	10
2½ pints.	Each	30.00	32.00	34.00	36.00	40.00

Multiple Oiler for Gas, Gasoline and Oil Engines.



This style of Oil Tank or "Multiple Feeder" has been particularly designed for use on gas and similar engines, where it is desired that a number of places (under pressure) be oiled from one vessel or reservoir, located in some convenient place. The feed is started or shut off by the simple turning of the "T" handle at the top of each outlet.

This "Multiple Oiler" is made in two standard sizes, No. 1 of 1½-pint capacity, and No. 2 of 2½-pints capacity.

Size No. 1 of 1½-pint capacity may be furnished with from two to six feed outlets; while size No. 2 of 2½-pints capacity may be furnished with from six to ten feed outlets.

The unions at the bottom of the sight-feeds are tapped for $\frac{5}{16}$-inch tube, 27 threads per inch, unless otherwise ordered; but will be furnished either male or female, threaded or plain, if so specified upon ordering.

"Multiple Oiling Tanks" of a larger capacity and with a greater number of sight-feeds may be furnished. In such cases the outside dimensions, or capacity in pints, and the number of sight-feeds, should be specified.

These "Multiple Oilers" will be furnished either "brass polished" or "nickel-plated," as may be desired.

Size 1,	No. of Feeds	2	3	4	5	6
1½ pints.	Each	18.00	22.00	24.00	27.00	30.00
Size 2,	No. of Feeds	6	7	8	9	10
2½ pints.	Each	33.00	36.00	40.00	44.00	48.00

Lunkenheimer Multiple Oiler and Oiler Fittings for Gravity and Pressure Systems.

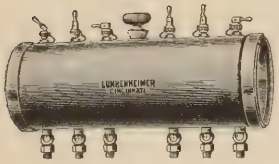


Fig. 667.
MULTIPLE FEED TANK.

The "Multiple" tank may be furnished with any capacity and with any number of feeds. Special prices will be offered upon receipt of capacity desired and the number of sight feeds required. Mention whether the tank is to be used for gravity feed or under pressure, and whether Finished Brass or Nickel Plated. Also state what size unions are required on the outlets.

State the stroke of engine and distance from floor to center of crank. We are prepared to supply the Oiler Arm without the stand.

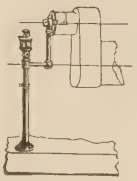


Fig. 509.
CENTRIFUGAL OILER & STAND.

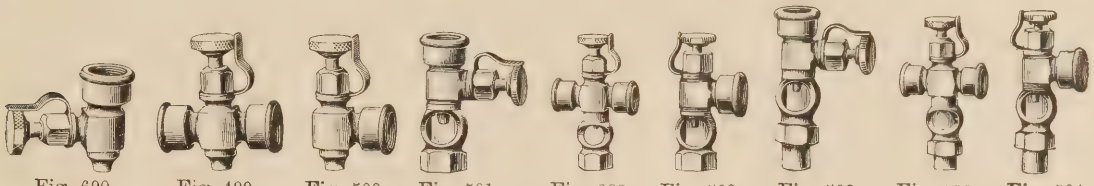


Fig. 690. Fig. 499. Fig. 500. Fig. 501. Fig. 688. Fig. 502. Fig. 593. Fig. 689. Fig. 594.

We here illustrate the various styles of oiling devices which we manufacture. They are intended to be used in connection with brass pipe and fittings, to be so adapted as to oil all of the bearing parts of an engine from one or two centrally located oil cups of large size. We can make any manner of oiling devices, but owing to the variety of conditions attending their application we would request parties when writing regarding these goods to give us, if possible, a sketch showing dimensions and style of engine for which device is required.

These fittings are neat and practical in construction, handsomely finished and convenient and economical in operation. All devices, with the exception of Figures 505, 506 and 507, are furnished for either ¼ or ⅜-inch pipe thread, but will be sent with ⅜-inch pipe thread, and outlet connection on drip valves will be threaded 27 threads by ¼-inch for ¼-inch O. D. brass pipe, and unions on sight-feed valves will be sent with ¼-inch pipe thread, unless otherwise specified.

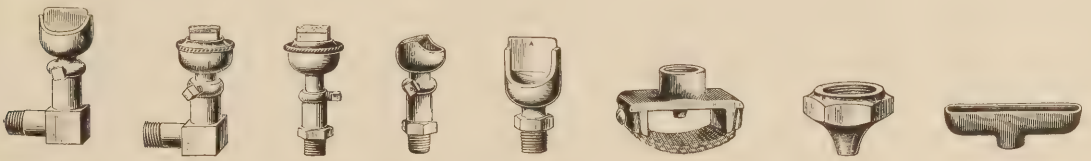


Fig. 579. Fig. 504. Fig. 503. Fig. 578. Fig. 505. Fig. 552. Fig. 506. Fig. 507.

Price List.

		Brass.	Nickel Plated.
Fig. 499.	Cross Drip Valve, each	1.50	1.75
" 690.	Straight Drip Valve, each	1.25	1.50
" 500.	Angle Drip Valve, "	1.25	1.50
" 501.	Straight Sight-Feed Valve, each	2.00	2.25
" 593.	" " " with Union, each	2.50	2.80
" 502.	Angle Sight-Feed Valve, each	2.00	2.25
" 594.	" " " with Union, each	2.50	2.80
" 688.	Cross Sight-Feed Valve, each	2.30	2.60
" 689.	" " " with Union, each	2.80	3.10
" 503.	Adjustable Wiper Cup for Wick, ¼ or ⅜-inch Pipe, each	2.50	3.00
" 504.	" " " " Elbow Shank ¼ or ⅜-inch Pipe, each	3.00	3.50
" 578.	" Crank Pin Wiper Cup, ¼ or ⅜-inch Pipe, each	2.50	3.00
" 579.	" Plain Wiper Cup, Elbow Shank, ¼ or ⅜-inch Pipe, each	3.00	3.50
" 552.	Horizontal Wick " " ¼ or ⅜-inch Pipe, each	2.00	2.30
" 506.	Wiper Tips, ¼ or ⅜-inch Pipe, each	.40	.50
" 506.	" " ½-inch Pipe, each	.50	.60

Fig. 505. Plain Wiper Cup.

Pipe Thread.	O Diameter.	Brass.	Nickel Plated.
¼	1¼	1.00	1.20
⅜	1½	1.50	1.75
½	2	2.00	2.40

Fig. 507. Drip Troughs.

Length.	Pipe Thread.	Rough.	Finished.	Nickel Plated.
3 inches.	¼	.75	1.00	1.25
5 "	⅜	1.00	1.50	2.00
7 "	½	1.50	2.00	2.75
9 "	½	2.00	2.75	3.50

Those desiring complete sets of Oiler trimmings, including piping, etc., will kindly submit general specifications and dimensions of engine frame and bed. We solicit correspondence on this subject from those desiring further details.

Lunkenheimer Automatic and Plain Compression Grease Cups.



Fig. 510.
"IDEAL."



Fig. 513.
"TIGER."



Fig. 512.
"MARINE."

The above are made of the best cast brass and are highly finished.

Compression Grease Cups.

Size	00	0	1	2	3	4
Shank Pipe Thread	⅛	¼	¼	⅜	½	½
Fig. 510. "Ideal"	1.50	2.00	2.50	3.20	4.30	6.00
" 513. "Tiger"	.70	.90	1.15	1.50	2.15	2.90
" 512. "Marine"	1.00	1.20	1.60	2.00	2.80	4.00

Lunkenheimer Plain and Sight-Feed Glass Oil Cups and Gauges.



Fig. 515.
"PIONEER."



Fig. 525.
"MIAMI."



Fig. 591.
"CHAMPION."



Fig. 546.
"SENTINEL."



Fig. 612.
PLAIN OIL GAUGE.

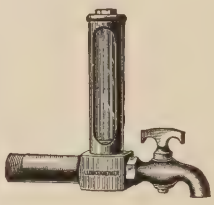


Fig. 529.
OIL GAUGE WITH SHIELD AND COCK.

Only the best grade of cast brass is used in the manufacture of these Oil Cups. Each type contains special advantages for peculiar requirements

Glass Oil Cups.

Size	000	00	0	1	1½	2	3	4	5	6
Shank Pipe Thread	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½
Fig. 515. "Pioneer"	.70	.75	.80	1.00	1.25	1.50	1.90	2.40	3.10	4.00
" 525. "Miami"	.70	.75	.80	1.00	1.25	1.50	1.90	2.40	3.10	4.00
" 546. "Sentinel"	----	----	3.00	3.25	3.50	3.75	4.25	5.25	7.25	9.25
" 591. "Champion"	----	----	----	1.40	----	2.00	2.60	4.00	----	----

The "Champion" Rod Oil Cup is furnished with shanks as follows: No. 1, ¼-inch; No. 2, ⅜-inch; No. 3, ½-inch; No. 4, ¾-inch pipe thread.

Oil Gauges.

Shank Pipe Thread	⅛	¼	⅜	½
Fig. 529. Without cock	.40	.50	.65	1.00
" 529. With "	.80	.90	1.05	1.40
" 612. Without "	.40	.50	.65	1.00
" 612. With "	.80	.90	1.05	1.40

Glass Oil Cups and Wipers.



Fig. 302.
NEEDLE CRANK PIN CUP.



Fig. 303.
PLAIN SLIDE TOP, GLASS CUP.



Fig. 304.
SIGHT FEED, PLAIN CUP.

Figs. 302, 303, 304. Glass Oil Cups.

No	7	8	9	10	11	12	13	14
Diameter of Glass	1	1¼	1½	1¾	2	2¼	2½	2¾
Capacity, ounces	¼	½	1	1½	2½	3¾	5	7
Threaded for Pipe	⅛	⅛	⅛	¼	¼	¼	⅜	⅜
Fig. 302. Nickel Plated, each	.84	.92	1.08	1.25	1.42	----	----	----
" 303. " " "	.83	1.08	1.25	1.42	1.67	2.00	2.33	2.67
" 304. " " "	1.08	1.25	1.42	1.58	1.75	1.92	2.08	2.33



Fig. 301.
STANDARD SLIDE TOP, GLASS CUP.



Fig. 305.
STOP FEED CUP, ROUND BASE.

Fig. 301. Glass Oil Cups.

No	000	00	0	1	1½	2	3	4	5	6
Diameter of Glass	1	1⅛	1¼	1½	1¾	2	2¼	2½	3	3½
Capacity, ounces	¼	½	⅞	1	1½	2½	4	5	10	18
Threaded for Pipe	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½
Fig. 301. Plain, each	.70	.75	.80	1.00	1.25	1.50	1.90	2.40	3.10	4.00
" 301. Nickel Plated, each	.80	.85	.95	1.20	1.50	1.75	2.20	2.75	3.50	4.50
" 301. Extra Glasses, "	.05	.06	.08	.10	.10	.12	.15	.25	.35	.65

Fig. 305. Glass Oil Cups.

No	7	8	9	10	11	12	13	14	15	16
Diameter	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3½
Capacity, ounces	¼	½	1	1½	2½	3¾	5	7	10	15
Pipe Thread	⅛	⅛	⅛	¼	¼	¼	⅜	⅜	½	½
Fig. 305. Plain, each	1.00	1.17	1.33	1.58	1.83	2.18	2.42	2.67	3.50	4.58
" 305 Nickel Plated, each	1.25	1.42	1.58	1.75	2.08	2.42	2.67	2.92	4.18	5.17



Fig. 307.
FIXED COVER STOP FEED, GLASS CUP.



Fig. 308.



Fig. 309.

Fig. 307. Glass Oil Cups.

No	0	1	2	3	3½	4	5	6
Capacity, ounces	½	1¼	3	4½	6	8½	1 Pt.	1 Qt.
Threaded Iron Pipe	⅛	⅛	¼	¼	¼	⅜	½	½
Fig. 307. Fixed Cover, Plain, each	1.92	2.17	2.50	3.00	3.66	4.08	5.42	6.67
" 307. " Nickel Plated, each	2.17	2.42	2.75	3.25	4.08	4.50	5.83	7.08

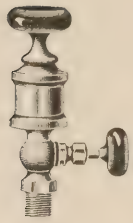
Fig. 308. Wiper System.

Including Blade, each 7.00

Fig. 309. Telescopic Blade.

Blades only, each 1.50

Lubricators, Oil and Grease Cups.



PLAIN LUBRICATOR.

Plain Lubricators.

No	1	2	3	4	5	6	7	8	9
Diameter of Cup	1	1¼	1½	1⅝	1¾	2	2¼	2½	3
Iron Pipe Thread	⅜	⅜	½	½	½	½	¾	¾	¾
Each	2.00	2.20	2.40	2.50	2.60	2.90	3.25	3.75	4.75



PLAIN OIL CUP.



LOCOMOTIVE OIL CUP.



HINGE LID OIL CUP.

Plain, Locomotive and Hinge Lid Oil Cups.

No	00	0	0½	1	1½	2	3	4	5	6	7	8
Diameter of Body	⅝	¾	⅞	1	1⅛	1¼	1½	1¾	2	2¼	2½	2¾
Iron Pipe Thread	⅛	⅛	⅛	⅛	¼	¼	¼	⅜	½	½	½	½
Plain, each	.25	.30	.35	.40	.50	.60	.90	1.25	1.75	2.25	2.75	3.50
Locomotive, each	----	.35	.40	.60	.75	1.00	1.50	2.00	2.50	----	----	----
Hinge Lid, "	----	----	.85	1.20	1.60	2.15	2.70	3.40	----	----	----	----



TEE HANDLE OIL CUP.



LEVER HANDLE OIL CUP.



ELBOW SHANK OIL CUP

Tee and Lever Handle Oil Cups.

No	1	2	3	4	5
Diameter of Body	1	1¼	1½	2	2¼
Iron Pipe Thread	¼	¼	⅜	½	½
Tee Handle, each	1.00	1.50	2.00	3.00	3.75
Lever Handle, "	1.35	1.60	2.20	3.25	4.00
Elbow Shank, "	.70	1.00	1.40	2.30	----



PLAIN GREASE CUP.



AUTOMATIC GREASE CUP.

Plain and Automatic Grease Cups.

No	1	1½	2	2½	3	3½	4	5
Diameter	1	1¼	1½	1¾	2	2¼	2½	3
Iron Pipe Thread	⅛	¼	¼	¼	⅜	⅜	½	¾
Plain, each	.50	.75	1.00	----	1.50	----	2.25	3.00
Automatic, each	2.50	3.00	3.75	4.50	5.50	6.50	8.00	----

Oilers and Oiler Sets.



RAILROAD OILER.

Steel Railroad Oilers.

No. 10.	Copperized,	1 Pint, per doz.	14.00
" 11.	"	1 Quart, "	18.00
" 17.	Nickel Plated,	1 Pint, "	18.00
" 18.	"	1 Quart, "	21.00

DIMENSIONS.

Pints: 3⅜ in. diam., 5 in. high, 12 in. nozzle.
Quarts: 4⅛ " 6 " 18 "

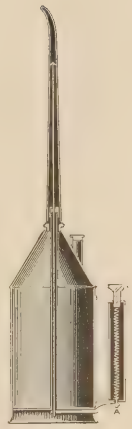


MALLEABLE OILER.

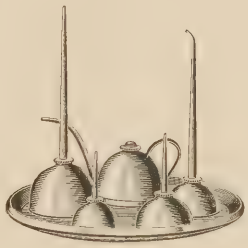
No	1	2	3
Per dozen	3.60	4.00	4.40

American Pattern Engineers' Oiler.

1	Pint,	Brass,	with	Valve,	per doz.	36.00
2	"	"	"	"	"	48.00
3	"	"	"	"	"	60.00
1	"	"	no	"	"	24.00
2	"	"	"	"	"	36.00
3	"	"	"	"	"	48.00
1	"	Tin,	with	"	"	24.00
2	"	"	"	"	"	33.00
3	"	"	"	"	"	45.00
1	"	"	no	"	"	12.00
2	"	"	"	"	"	21.00
3	"	"	"	"	"	33.00



AMERICAN PATTERN ENGINEERS' OILER.



ENGINEERS' SET.

Engineers' Sets.

With Round Tray.

No. 30.	Five Pieces,	Copperized Steel (including Tray), per set	5.00
" 40.	Six "	" " " "	7.00
" 50.	Five Pieces,	Nickel Plated " " "	7.00
" 60.	Six "	" " " "	10.00

With Oval Tray.

No. 35.	Five Pieces,	Copperized Steel (including Tray), per set	7.00
" 45.	Six "	" " " "	10.00
" 55.	Five Pieces,	Nickel Plated " " "	8.00
" 65.	Six "	" " " "	11.00

Steamboat Sets.

With Round Tray.

No. 70	Five Pieces,	Copperized Steel (including Tray), per set	6.00
" 80.	Six "	" " " "	9.00
" 90.	Five Pieces,	Nickel Plated " " "	8.00
" 100.	Six "	" " " "	11.00

With Oval Tray.

No. 75.	Five Pieces,	Copperized Steel (including Tray), per set	9.00
" 85.	Six "	" " " "	12.00
" 95.	Five Pieces,	Nickel Plated " " "	10.00
" 105.	Six "	" " " "	13.00

The Steamboat Sets are furnished with double-bottomed trays, which contain recesses for holding the oilers in place in the event of rough weather.

Oilers, Fillers, Hand Lamps, Etc.



OILER.
No. 13.



OILER.
No. 14.

Steel Anti-Rust Oilers with Improved Clock Spring Steel Bottoms.

No. 12.	¼	Pint	Copperized	Oiler,	2¾	inch	diameter,	2½	inch	nozzle,	per dozen 4.50
" 13.	⅓	"	"	"	3⅜	"	"	3	"	"	" 5.50
" 13A.	⅓	"	"	"	3⅜	"	"	5	"	"	" 6.00
" 14.	⅓	"	"	"	3⅜	"	"	9	"	"	" 6.50
" 14A.	½	"	"	"	3¾	"	"	3	"	"	" 7.50
" 14AA.	½	"	"	"	3¾	"	"	5	"	"	" 8.00
" 14B.	½	"	"	"	3¾	"	"	9	"	"	" 8.50
" 15.	1	"	"	"	4⅛	"	"	3	"	"	" 9.25
" 15A.	1	"	"	"	4⅛	"	"	5	"	"	" 9.75
" 16.	1	"	"	"	4⅛	"	"	9	"	"	" 10.50
" 120.	¼	"	Nickel Plated	"	2¾	"	"	2½	"	"	" 6.50
" 130.	⅓	"	"	"	3⅜	"	"	3	"	"	" 8.00
" 130A.	⅓	"	"	"	3⅜	"	"	5	"	"	" 8.75
" 140.	⅓	"	"	"	3⅜	"	"	9	"	"	" 9.20
" 140A.	½	"	"	"	3¾	"	"	3	"	"	" 10.00
" 140AA.	½	"	"	"	3¾	"	"	5	"	"	" 10.75
" 140B.	½	"	"	"	3¾	"	"	9	"	"	" 11.25
" 150.	1	"	"	"	4⅛	"	"	3	"	"	" 12.00
" 150A.	1	"	"	"	4⅛	"	"	5	"	"	" 13.00
" 160.	1	"	"	"	4⅛	"	"	9	"	"	" 14.00

All nozzles 3 to 18 inches are interchangeable and will fit any size Oiler. Order by number.



ENGINEER'S STEEL FILLERS.



STEEL TALLOW POT.



STEEL JACKET LAMP.



ENGINEER'S HAND LAMP.

Engineer's Steel Fillers and Tallow Pots.

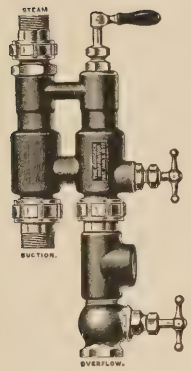
No. 19.	1	Pint	Copperized	Filler,	4⅛	inch	diameter,	3½	inch	high,	screw top, per dozen 14.00
" 19A.	1½	"	"	"	4¾	"	"	4	"	"	" " 17.00
" 210.	1	Quart	"	"	5	"	"	5	"	"	" " 20.00
" 211.	2	"	"	"	6	"	"	6	"	"	" " 24.00
" 190.	1½	Pint	Nickel Plated	"	4¾	"	"	4	"	"	" " 22.00
" 200.	1	Quart	"	"	5	"	"	5	"	"	" " 30.00
" 201.	2	"	"	"	6	"	"	6	"	"	" " 34.00
" 212.	1	"	Copperized Tallow Pot,		5	"	"	5	"	"	" 21.00
" 213.	2	"	"	"	6	"	"	6	"	"	" 25.00
" 214.	1	"	Nickel Plated	"	5	"	"	5	"	"	" 32.00
" 215.	2	"	"	"	6	"	"	5	"	"	" 36.00

Steel Jacket and Engineer's Hand Lamps.

No. 20.	⅓	Pint	Copperized	Jacket Lamp,	3⅜	inch	diameter,	per dozen 6.00		
" 20½.	½	"	"	"	3¾	"	"	" 9.00		
" 21.	1	"	"	"	4⅛	"	"	" 12.00		
	½	"	Tin	Engineer's	Lamp,			" 4.00		
	1	"	"	"	"			" 7.00		
	½	"	Galv. Iron	Engineer's	Lamp,			" 5.00		
	1	"	"	"	"			" 8.00		
	½	"	Brass	"	"			" 6.00		
	1	"	"	"	"			" 10.00		
	½	"	Malleable Iron	"	"			" 5.00		

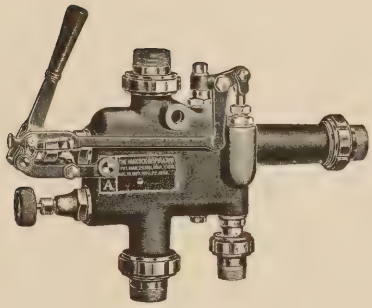
The Hancock Inspirators.

Stationary Pattern.



HANCOCK INSPIRATOR.
Stationary Type.

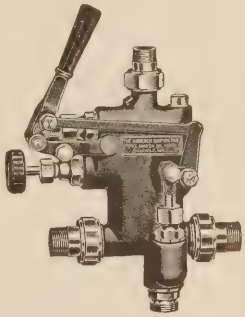
Sizes.	Prices "Stationary" Type.	Pipe Connections. Steam.	Suction and Delivery.	Overflow.	Capacity per Hour with 60 lbs. Steam Pressure. Gallons.	Horse Power for the Ordinary Type of Boiler and Engine.	Horse Power on a Basis of 30 lbs. Evaporation per Horse Power per Hour.
7½	16.00	⅜	⅜	¼	60	4 to 6	5 to 8
8¾	18.00	⅜	½	⅜	90	6 to 8	8 to 15
10	20 00	⅜	½	⅜	120	8 to 15	15 to 25
12½	25.00	½	¾	½	220	15 to 30	25 to 35
15	30.00	½	¾	½	300	30 to 40	35 to 60
17½	40.00	¾	1	¾	420	40 to 60	60 to 75
20	45.00	¾	1	¾	540	60 to 75	75 to 100
22½	55.00	1	1¼	1	720	75 to 90	100 to 130
25	60.00	1	1¼	1	900	90 to 120	130 to 175
30	75.00	1¼	1½	1¼	1260	120 to 165	175 to 235
35	90.00	1¼	1½	1¼	1740	165 to 230	235 to 300
40	110.00	1½	2	1½	2230	230 to 300	300 to 400
45	125.00	1½	2	1½	2820	300 to 375	400 to 500
50	150.00	2	2½	2	3480	375 to 500	500 to 650
55	175.00	2	2½	2	3650	500 to 600	650 to 700



Type A.
HANCOCK INSPIRATOR.
Horizontal Pattern.

Types A and C.

Types A and C of the Hancock Inspirator have been introduced to meet the demand for an instrument of the class which is operated by one lever or handle. Type C is the upright pattern which is made in sizes from No. 10 to 20, inclusive. Type A is the horizontal pattern and is made in sizes from No. 25 to No. 55, inclusive. Each type is operated and connected the same.



Type C.
HANCOCK INSPIRATOR.
Upright Pattern.

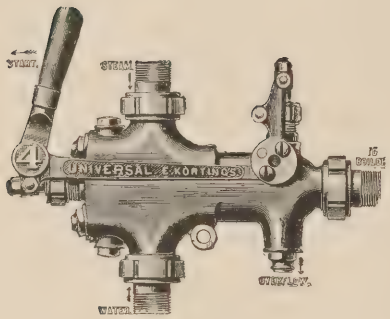
Hancock Inspirators—Types A and C.

Sizes.	Type.	Prices Types A and C.	Pipe Connections. Steam.	Suction.	Delivery.	Overflow.	Capacities per Hour. With 60 lbs. Steam Pressure. Gallons.	With 100 lbs. Steam Pressure. Gallons.	Horse Power for the Ordinary Type of Boiler and Engine.	Horse Power on a Basis of 30 lbs. Evaporation per Horse Power per Hour.
10	C	20.00	¾	¾	¾	¾	120	135	8 to 15	12 to 20
12½	C	25.00	¾	¾	¾	¾	220	245	15 to 30	20 to 40
15	C	30.00	¾	¾	¾	¾	300	340	30 to 45	40 to 55
17½	C	40.00	¾	1	1	1	420	475	45 to 65	55 to 80
20	C	45.00	¾	1	1	1	540	610	65 to 80	80 to 110
25	A	60.00	1¼	1¼	1¼	1¼	900	1020	80 to 130	110 to 180
30	A	75.00	1½	1½	1½	1½	1260	1430	130 to 170	180 to 235
35	A	90.00	1½	1½	1½	1½	1740	1975	170 to 230	235 to 300
40	A	110.00	2	2	2	1½	2230	2530	230 to 300	300 to 400
45	A	125.00	2	2	2	1½	2820	3200	300 to 375	400 to 500
50	A	150.00	2	2½	2	1½	3480	3950	375 to 500	500 to 650
55	A	200.00	2	2½	2	1½	3650	4140	500 to 600	650 to 750

Injectors.

The Korting Universal Double Tube Injector.

Working to best advantage under all conditions.
Take water at a temperature of 150 degrees Fahrenheit.
Stop and start by one movement of a lever.



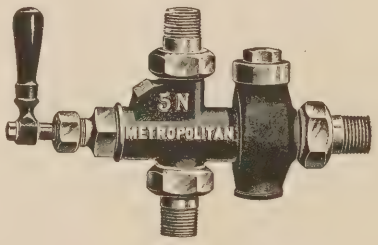
KORTING DOUBLE TUBE INJECTOR.

Size. No.	Price.	Size of Iron Pipe.	Steam 50 lbs. Gals.	Steam 50 lbs. H. P.	Steam 100 lbs. Gals.	Steam 100 lbs. H. P.	Steam 150 lbs. Gals.	Steam 150 lbs. H. P.	Size of Copper Pipe O. D.
00	20.00	⅛	33	7	48	10	60	12	¼
0	21.00	¼	83	17	101	20	112	22	⅜
1	23.00	⅜	112	23	143	30	180	36	½
2	28.00	½	172	35	210	40	232	46	⅝
3	38.00	¾	278	56	338	70	397	80	⅞
3½			398	80	472	95	547	110	
4	50.00	1	533	108	622	125	720	150	1⅛
5	60.00	1¼	675	136	802	160	922	190	1½
6			825	165	990	200	1125	230	
7	85.00	1½	1072	215	1372	280	1612	320	1¾
8			1388	280	1800	360	2115	430	
9	120.00	2	1688	340	2100	420	2475	500	2¼
10			2025	400	2438	500	2850	570	
12	165.00	2½	3000	600	3638	750	4252	850	2¾
14	250.00	3	3867	780	4635	930	5500	1100	3¼
16			5025	1000	6075	1200	7000	1400	
20	450.00	4	9000	1800	10840	2200	12525	2500	4¼

The horse power in above table is based on about 5 gallons per horse-power, which is 30 per cent. in excess of the corresponding boiler horse power. For intermediate capacities, and also if suction exceeds 10 feet vertical, select next larger size of injector.

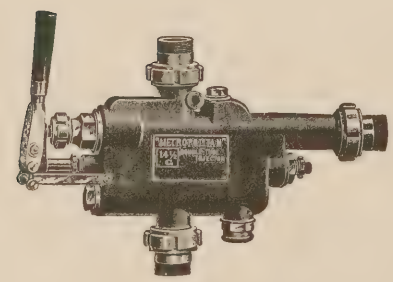
Metropolitan Automatic Injector—Model N.

Sizes.	Prices. Model N.	Size of all Pipe Connections.	Size Over-flow or Waste Pipe.	Capacity with 80 lbs. Steam Pressure 2 foot Lift. Gals.	Horse-Power for the Ordinary Type of Boiler and Engine.	Horse-Power on a Basis of 30 lbs. Evaporations per Horse Power per Hour.
2	15.00	⅜	¾	60	4 to 6	5 to 8
3	16.00	⅜	¾	80	6 to 8	8 to 12
3½	18.00	½	¾	120	8 to 15	12 to 20
4	20.00	½	¾	165	15 to 20	20 to 28
5	25.00	¾	1	250	20 to 30	28 to 40
6	30.00	¾	1	350	30 to 45	40 to 55
7	40.00	1	1¼	500	45 to 65	55 to 80
8	45.00	1	1¼	600	65 to 80	80 to 110
9	55.00	1¼	1½	800	80 to 100	110 to 145
10	60.00	1¼	1½	1000	100 to 130	145 to 180
11	75.00	1½	2	1300	130 to 170	180 to 235
12	90.00	1½	2	1750	170 to 230	235 to 300
13	110.00	2	2½	2300	230 to 300	300 to 400
14	125.00	2	2½	2850	300 to 375	400 to 500



Model N.
METROPOLITAN AUTOMATIC INJECTOR.

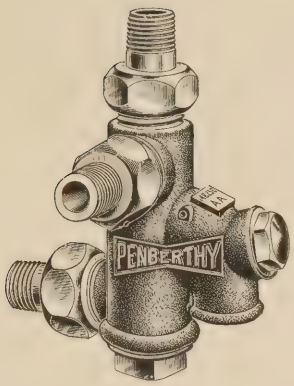
Metropolitan Double Tube Injector—Model G.



Model G.
METROPOLITAN DOUBLE TUBE INJECTOR.

Sizes.	Prices. Model G.	Size of all Pipe Connections.	Size of Over-flow or Waste Pipe.	Capacity with 80 lbs. Steam Pressure. 2 foot Lift. Gallons.	Horse Power for the Ordinary type of Boiler and Engine.	Horse Power on a Basis of 30 lbs. evaporation per Horse Power per Hour.
2½	18.00	½	¾	120	8 to 15	12 to 20
4½	20.00	½	¾	165	15 to 20	20 to 28
5½	25.00	¾	¾	250	20 to 30	28 to 40
6½	30.00	¾	¾	350	30 to 45	40 to 55
7½	40.00	1	¾	500	45 to 65	55 to 80
8½	45.00	1	¾	600	65 to 80	80 to 110
9½	55.00	1¼	1	800	80 to 100	110 to 145
10½	60.00	1¼	1	1000	100 to 130	145 to 180
11½	75.00	1½	1¼	1300	130 to 170	180 to 235
12½	90.00	1½	1¼	1750	170 to 230	235 to 300
13½	110.00	2	1½	2300	230 to 300	300 to 400
14½	125.00	2	1½	2850	300 to 375	400 to 500
15½	150.00	2½	2	3500	375 to 500	500 to 650
16½	200.00	2½	2	4200	500 to 650	650 to 800
17½	250.00	3	2½	4700	650 to 775	800 to 950
18½	300.00	3	2½	5500	775 to 950	950 to 1200

Injectors and Ejectors.



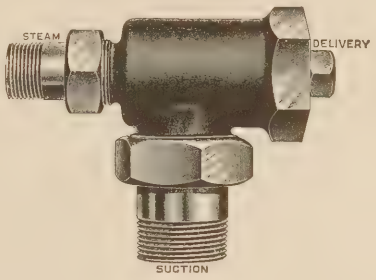
PENBERTHY INJECTOR.

Penberthy Automatic Injector.

Size.	Horse Power.	Pipe Connections. Inches.	Capacity per hour, 1 to 3 ft. lift 50 to 75 lbs. steam pressure. Max. Gals.	Min. Gals.	Price.
OO	4 to 8	3/8	80	55	16.00
A	8 to 10	1/2	120	70	18.00
AA	10 to 15	1/2	165	90	20.00
B	15 to 25	3/4	250	135	25.00
BB	25 to 35	3/4	340	165	30.00
C	35 to 50	1	475	300	40.00
CC	50 to 60	1	575	350	45.00
D	60 to 95	1 1/4	750	400	55.00
DD	95 to 120	1 1/4	920	500	60.00
E	120 to 165	1 1/2	1300	700	75.00
EE	165 to 230	1 1/2	1740	900	90.00
F	230 to 290	2	2270	1100	110.00
FF	290 to 365	2	2820	1400	125.00

Hancock Ejector.

Size.	Pipe Connections — Steam. Inches.	Suction and Delivery. Inches.	Capacity per Hour. Steam Pressure, 60 lbs. Gallons.	Price.
1 Brass	1/4	1/2	244	8.00
2 "	3/8	3/4	550	10.00
3 "	1/2	1	977	15.00
4 "	3/4	1 1/4	1525	20.00
5 Iron	3/4	1 1/2	2200	25.00
6 "	1	2	3900	35.00
7 "	1 1/4	2 1/2	6000	45.00
8 "	1 1/2	3	8800	55.00
9 "	2	4	15600	70.00
10 "	2 1/2	5	24300	110.00
11 "	2 1/2	6	35000	160.00



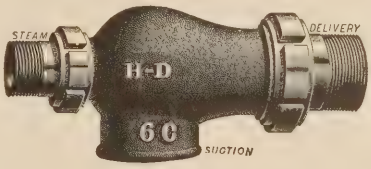
HANCOCK EJECTOR.

Sizes 1, 2, 3 and 4 are made entirely of brass. Sizes 5, 6 and 7 have iron bodies and brass unions for steam and suction connections. Sizes 8, 9, 10 and 11 have iron bodies and brass unions for steam connection only. Sizes 5, 6, 7, 8, 9, 10 and 11 made entirely of brass. Larger sizes and Ejectors for handling corrosive liquids furnished on special order.

SPECIAL.—All iron ejectors made to order.



Model P.
H D EJECTOR.



Model C.
H D EJECTOR.
Coupling on Delivery End.

Models P and C.

Sizes.	Pipe Connections — Steam.	Suction and Delivery.	Capacity per Hour with 50 lbs. Steam Pressure. Gals.	Price.
1 Brass	3/8	1/2	250	8.00
2 "	1/2	3/4	500	10.00
3 "	3/4	1	960	15.00
4 "	1	1 1/4	1300	20.00
5 "	1 1/4	1 1/2	2000	25.00
6 Iron	1 1/4	2	4000	35.00
7 "	1 1/2	2 1/2	8000	45.00
8 "	2	3	11000	55.00
9 "	2 1/2	4	15000	70.00
*10 "	4	6	45000	175.00

* Model C only.

To Operate Models C and P.

Open the valve in the steam pipe. As the Ejector will discharge the greatest quantity of water with about 60 lbs. steam pressure it is desirable, when higher pressures are used, to throttle the steam valve so as to reduce the steam pressure at the Ejector.

The capacities given in the above list are when lifting 4 feet and elevating 4 feet—water cold. The capacity of all Ejectors is decreased when the lift is increased or the temperature of water increased

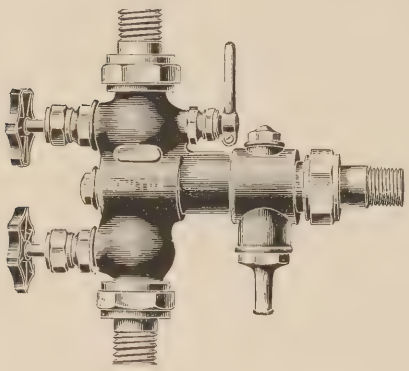
The Loftus Automatic Injector.

Size.	Size of All Pipe Connections.	Capacity per Hour with 80 lbs. Steam Pressure. Gals.	Horse Power—For the Ordinary Type of Boiler and Engine.	Horse Power—On a Basis of 30 lbs. Evaporation per H. P. per Hour.	Price.
0	¼	25	1 to 3	1 to 5	20.00
1	⅜	60	3 to 6	5 to 8	15.00
2	⅜	90	6 to 8	8 to 12	16.00
3	½	120	8 to 15	12 to 20	18.00
4	½	180	15 to 20	20 to 28	20.00
5	¾	260	20 to 30	28 to 40	25.00
6	¾	355	30 to 45	40 to 55	30.00
7	1	510	45 to 65	55 to 80	40.00
8	1	600	65 to 80	80 to 110	45.00
9	1¼	800	80 to 100	110 to 145	55.00
10	1¼	1000	100 to 130	145 to 180	60.00

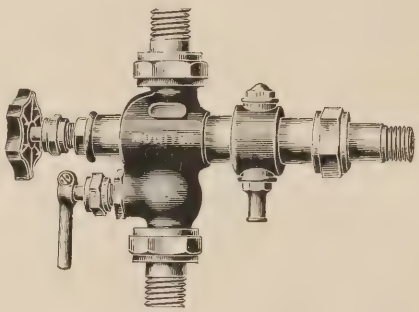


LOFTUS INJECTOR.

Monitor Injectors, Lifting and Non-Lifting, for Stationary, Portable and Marine Boilers.



CLASS D, LIFTING.



CLASS C, NON-LIFTING.

These Injectors are capable of being worked down to half their capacity or less, by regulating with water valve only. They are well adapted to feed batteries of boilers where all may, or may not, be required to be operated at the same time. They are also peculiarly fitted to supply boilers of portable and traction engines, and all other boilers where, from jarring or unsteady conditions under which they are required to work, ordinary injectors would break and fail to do their duty. They have fixed nozzles, and no movable parts to get out of order.

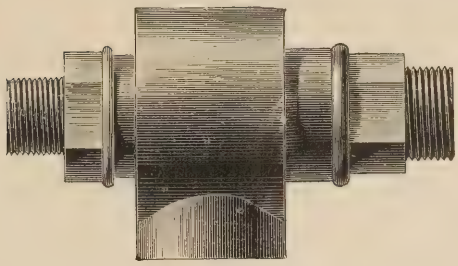
CLASS D—Lifting, is applied only when water to feed boilers is taken from rivers, ponds, reservoirs, wells, etc., where there is no head of water; and will raise water, according to steam pressure, from 6 to 25 feet and put same in boiler.

CLASS C—Non-lifting, is applied in all cases where there is a head of water, or pressure from hydrant, dam or reservoir. This class of Injector should be placed below the level of the water supply, and if needed can be made so as to work at less than ten pounds steam pressure.

Size of Injector. No.	Inside Diameter of Pipe in Inches.	Delivery per Hour in Gallons at a Steam Pressure of 120 Lbs.	60 Lbs.	20 Lbs.	Price, Class D, Monitor, Lifting.	Price, Class C, Monitor, Non-Lifting.
2	½	170	135	90	19.00	17.00
2½	½	255	210	120	24.00	21.00
3	¾	375	285	195	32.00	27.00
4	1	615	480	315	45.00	40.00
5	1¼	900	690	450	55.00	50.00
6	1¼	1230	960	570	65.00	60.00
7	1½	1650	1260	840	80.00	75.00
8	1½	2130	1590	1050	100.00	90.00
9	2	2640	1980	1310	120.00	110.00
10	2	3240	2465	1635	140.00	130.00
12	2½	4320	3300	2350	180.00	160.00
14	2½	6100	4650	3200	225.00	200.00
16	3	8050	6050	4180	275.00	250.00
18	3	9850	7550	5390	350.00	325.00
20	3½	12000	9420	6530	450.00	400.00

Attention is called to the substantial make-up of these Injectors, in which the combination of strength and symmetry is well illustrated; also to the fact that they have attached to them steam valves and water cocks of best quality, which are usually separate, and charged extra on the price lists of other makers. For this reason considerable expense is spared in fitting them to boilers.

Ejectors, Water Heaters, Strainers, Etc.



NASON EJECTOR.

The Nason Ejector.

Size	1	2
Size of Steam Connections, inches	¾	1
" Suction, inches	1¼	1½
" Discharge, "	1	1¼
Price, Iron	3.00	5.00
" Brass	3.00	5.00

Drive Well Ejector.

Size.	Prices Model R.	Steam Pipe, Inside Casing.	Steam Pipe, Outside Casing.	Suction and Delivery.	Steam Pipe Casing.	Minimum Diameter of Well.	Capacity with 75 Lbs. Steam Pressure Lifting 1 ft., Elevating 25 feet. Gallons.
2	15.00	⅜	½	¾	¾	3	400
3	20.00	½	¾	1	1	4	800
4	30.00	¾	1	1¼	1¼	4½	1200
5	40.00	1	1¼	1½	1½	5	1800



DRIVE WELL EJECTOR.

The H. D. Noiseless Water Heater,

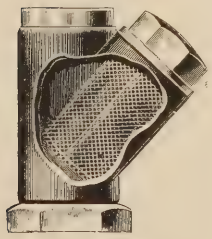
With data showing time required to raise 100 gallons of water 50 deg. Fahr.



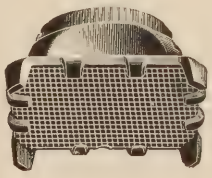
NOISELESS WATER HEATER.

Size.	Prices.	Size Steam Connection.	Size Water Inlet.	With 10 Lbs. St'm Pressure. Time in Minutes.	With 20 Lbs. St'm Pressure. Time in Minutes.	With 40 Lbs. St'm Pressure. Time in Minutes.	With 60 Lbs. St'm Pressure. Time in Minutes.	With 80 Lbs. St'm Pressure Time in Minutes.
1	5.00	⅜	1¼	40	30	18	13	10
2	7.00	½	1½	12	9	5½	4	3
3	10.00	¾	2	7½	6	3½	2½	1¾
4	15.00	1	2½	5	3	2	1½	1

Strainers and Funnels.



UNION STRAINER.
For Injectors and Ejectors.



FLAT STRAINER.
For Injectors and Ejectors.

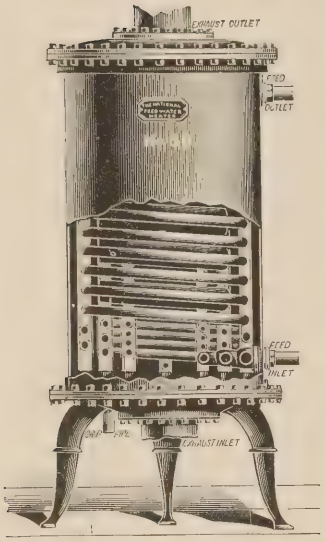


DRIP FUNNEL.
For Injectors.

Strainers and Funnels.

Size Pipe Connections	½	¾	1	1¼	1½	2	2½	3	4
Union Strainers	4.00	5.00	6.00	7.50	9.00	12.00	----	----	----
Flat Strainers	.30	.40	.50	.60	.80	1.00	1.25	1.75	2.50
Drip Funnel	----	1.00	1.25	1.50	1.75	2.00	2.50	----	----

The National Feed Water Heater.



THE NATIONAL FEED WATER HEATER.

The National Heater

Consists of single or manifold coils of seamless drawn brass or copper tubes in an iron shell. The feed water for the boiler, passing through the coil, is heated by the exhaust steam from the engine passing through the shell.

It is a plain common-sense heater, and carries with it the following valuable points :—The liability to leaky joints is wholly obviated by the coil, which takes care of all contraction and expansion. The flow of the feed water is free and easy. The trouble from back pressure on the engine is entirely obviated, as the exhaust passage through the Heater is from four to ten times larger than the exhaust pipe from the engine. It will deliver feed water at 206° to 212° for ten hours a day and without one ounce of back pressure ; and last, but not least, it is the lowest-priced Heater in the market.

A single coil of brass tube is used in all Heaters up to No. 10 inclusive; Nos. 12 to 30 have two coils; Nos. 40 and 50, three coils; Nos. 60 and 80 have four coils; Nos. 100, 125 and 150 have five coils, and Nos. 200 and 250 have six coils. These Heaters have special brass manifolds for connecting the coils into one flow of feed water, both at the inlet and outlet. Each coil is carefully secured, and great care is taken to make a Heater that shall be low priced, but at the same time economical and durable. All coils are tested to 200 lbs. pressure, and are guaranteed to stand 600 lbs.

Heater No. 05 exhausts in at bottom and out at top. Nos. 1 to 2½ exhaust in at top and out at top. No. 3 and above exhaust in at bottom and out at top.

Size and location of feed and exhaust connections can be varied to suit requirements.

The shells of Nos. 05 to 30 are cast iron. No. 40 and above are of boiler steel with cast iron heads.

All regular Heaters are arranged to stand vertical and all above No. 2½ have legs; any size can be used horizontal and the exhaust can be made eccentric if desired.

In connection with a condenser, it will heat the water to 130° and increase the vacuum. It is the best Heater ever used on a steamboat, either with or without a condenser.

The horse power rating refers to that of the boiler the Heater is to feed.

We also manufacture special Heaters for use in Hotels, Hospitals, Breweries, Laundries, Dye Houses, etc., and shall be pleased to give full information when desired.

Estimates and blue prints given on larger sizes and on Heaters for special location or special purposes.

Never reduce the size of the drip pipe on the Heater, and always keep it open.

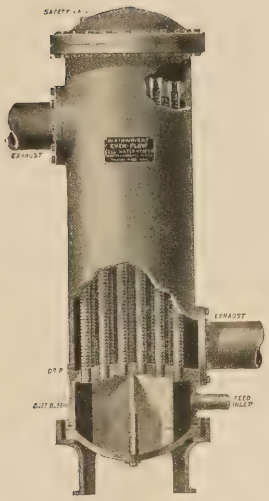
Standard Sizes, Details and Dimensions of the National Feed Water Heater.

No.	Horse Power.	Diameter, Feed Pipe. Inch.	Diameter, Exhaust Pipe. Inch.	Outside Dimensions. Diameter. Inch.	Outside Dimensions. Height. Inch.	Height, Including Legs. Inch.	Weight. Lbs.	List. Price.
05	5	½	2	7	10		35	15.00
1	10	½	2	11	12		65	20.00
1½	15	½	2½	11	17		80	25.00
2	20	¾	2½	16	18		180	35.00
2½	25	1	3	19	20		270	45.00
3	30	1	4	20	21½	34	350	55.00
4	40	1	4	20	23	36	390	65.00
5	50	1	4	20	28½	41	420	80.00
6	60	1	4	20	33½	46	475	100.00
8	80	1	4	20	38½	51	515	120.00
10	100	1¼	5	22	41	56	800	140.00
12	125	1½	5	22	41	56	850	175.00
15	150	1½	8	26	45	60	1150	220.00
20	200	2	8	26	55	70	1300	280.00
25	250	2	8	26	61	76	1450	340.00
30	300	2	8	26	69	84	1650	400.00
40	400	2½	10	36	70	88	1900	500.00
50	500	2½	10	36	84	102	2200	600.00
60	600	3	12	42	79	101	2800	700.00
70	700	3	12	42	83	105	3000	850.00
80	800	3	12	42	88	111	3200	1000.00
100	1000	4	18	56	95	117	5100	1400.00
125	1250	4	18	56	111	133	5600	1600.00
150	1500	4	18	56	121	143	5900	2000.00
200	2000	5	18	66	116	138	9400	2500.00
250	2500	5	18	66	131	153	10500	3500.00
300	3000	5	24	66	148	170	11500	4000.00
400	4000	6	24	66	176	198	13500	5000.00

Diameter of exhaust can be changed to suit engine.

Feed Water Heaters.

Wainwright Even Flow Heaters—Horizontal or Vertical, Cast Iron Shells.



THE WAINWRIGHT EVEN FLOW HEATER.

Fitted with seamless drawn corrugated copper tubes, arranged in groups through which the water flows at a comparatively high velocity, thus giving the highest rate of heat transmission, while retaining the advantage of a straight tube which may be readily inspected and cleaned by removal of end cover.

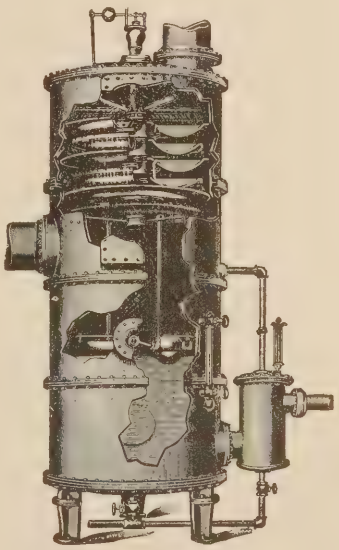
No.	Horse Power.	Diameter of Shell. Inches. Cover Flange.	Height. in Inches	Exhaust.	Feed.	Shipping Weight.	Price.
2B	50	17	64¼	6	1½	827	140.00
3B	75	17	72¼	6	1½	930	150.00
4B	100	17	87¼	6	1½	1050	160.00
5B	125	17	87¼	8	1½	1050	180.00
6B	150	17	101¼	8	1½	1250	200.00
7B	200	20	93½	10	2	1550	280.00
8B	250	20	93½	10	2	1550	300.00
9B	300	23½	90½	12	2½	1850	360.00
10B	350	23½	102½	12	2½	2070	390.00
11B	400	23½	102½	12	2½	2075	440.00
12B	500	27½	105¼	14	2½	3045	600.00
13B	600	27½	113¼	14	3	3400	660.00
14B	700	30	123¼	14	3	3650	750.00
15B	800	30	123¼	14	3	3650	800.00
16B	900	34	122¼	14	4	4730	1000.00
17B	1000	34	122¼	14	4	4730	1100.00
18B	1100	34	132¼	14	4	4860	1200.00
19B	1200	34	132¼	14	4	4860	1300.00
20B	1300	39	131¼	18	4	7610	1600.00
21B	1400	39	137¼	18	4	7810	1700.00
22B	1500	39	143¼	18	4	8010	1770.00
23B	2000	44	138¼	24	5	9995	2150.00
24B	3000	44	180¼	24	5	12300	2650.00
25B	4000	59	154	30	6	18790	4400.00
26B	5000	59	177½	30	6	20495	4950.00

Pittsburgh Feed Water Heater and Purifier.

No	Horse Power.	Water per Hour. Pounds.	Diam. Inches.	Height. Feet.	Diameter Exhaust. Inches.	Diameter Feed. Inches.	Weight. Pounds.	Price.
1	50	1500	21	6	4	¾	1100	225.00
2	75	2250	21	6½	5	¾	1200	235.00
3	100	3000	21	7	5	1	1350	260.00
4	150	4500	21	8	6	1	1650	280.00
5	175	5250	24	8	7	1¼	1850	320.00
6	200	6000	24	8½	7	1¼	2000	360.00
7	250	7500	30	8	8	1½	2750	430.00
8	300	9000	30	9	8	1½	3000	480.00
9	400	12000	36	8½	10	1½	3500	540.00
10	500	15000	36	9½	10	2	4000	610.00
11	600	18000	42	10	12	2	5000	750.00
12	750	22500	42	11	12	2½	6000	820.00
13	900	27000	42	12	12	2½	7500	900.00
14	1000	30000	48	12	14	2½	8500	1100.00
15	1250	37500	48	12½	14	2½	9000	1210.00
16	1500	45000	51	12½	16	3	10000	1300.00
17	1750	52500	51	13½	16	3	11500	1380.00
18	2000	60000	60	13½	18	3	15000	1500.00

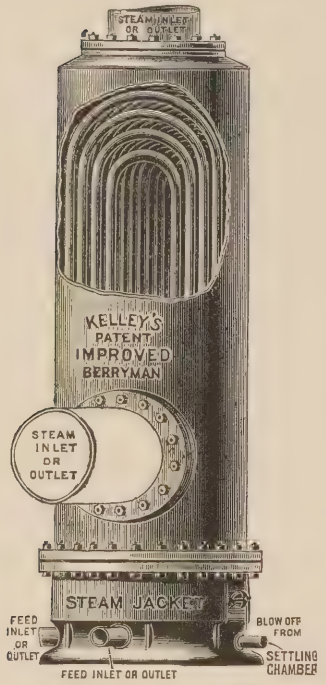
Larger Sizes Prices on Application.

Especially designed for economy of space, efficiency and durability. Built entirely of cast iron and has cast iron pans, which are easily removable or may be cleaned in position. Will give perfectly pure water at a temperature of 210°.



PITTSBURGH FEED WATER HEATER AND PURIFIER.

Improved Berryman Water Tube Feed Water Heater.



IMPROVED BERRYMAN FEED WATER HEATER.

The Improved Berryman meets all the requirements that, after an experience of over a quarter of a century, we have found essential in a reliable, efficient and practical feed water heater and purifier.

The shell is of cast iron or steel. The area being many times greater than the exhaust, giving it a free exhaust; there can be no back pressure. Not being subjected to the boiler pressure, the shell cannot leak.

The tubes are of seamless drawn brass, tested to 1,000 pounds hydrostatic pressure before being used in Heater. All strain from expansion and contraction is overcome by the "∩" shape; both ends being fastened into the base, the tubes cannot leak.

There is no separate tube sheet. The tubes are expanded directly into the crown of the steam jacketed base. The one flanged joint formed between the shell and the base, not being under any pressure, cannot leak.

The settling chamber, inside of and entirely surrounded by the steam jacketed base, which retains the high heat imparted to the water through the tubes, entraps all the impurities, which can be blown off at will. A hand hole is also provided for additional examination and cleaning.

All bolts used in this Heater are protected and are not in contact with either the water or steam and so cannot rust or weaken from long continued use.

Our test is 250 pounds hydrostatic pressure to the square inch, and we guarantee absolute tightness.

It is well known that water in rapid circulation will absorb more heat than when stagnant or moving slowly.

The perfect circulation of the water through the tubes of the Improved Berryman insures at all times the very highest degree of efficiency.

Horse Power	40	50	60	80	100	125	150	200	250	300
Extreme Diameter, inches	16	16	16	22	22	22	22	22	26	26
Extreme Height, "	30	35	40	43	48	54	63	81	65	74
Diameter Exhaust, "	4	4	4	5	6	6	8	8	10	10
Diameter Feed, "	1	1	1	1½	1½	1½	1½	2	2	2

Larger sizes on application.

Prices given on application stating horse power and sizes of exhaust and feed pipes.

The Nason Feed Water Heater for Exhaust Steam Only.

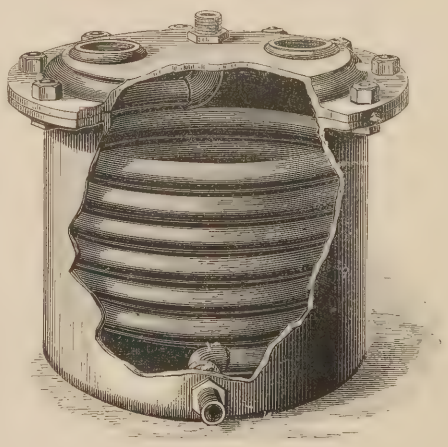
In construction, a cast iron shell flanged at the top to receive a cover, which contains two port openings, one for the inlet and the other for the outlet of the exhaust steam.

The water to be heated is conveyed through a spiral iron pipe coil, with inlet at top and outlet at bottom of shell as shown.

The shell is also tapped near the bottom for the removal of condensation.

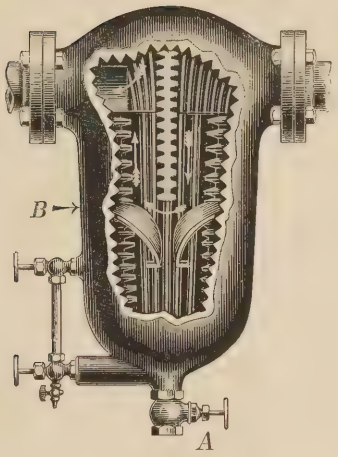
The heater is liberally supplied with coil surface, and is guaranteed for the horse power as rated.

Number	1	2	3	4	5
Size Pipe Coil	¾	1	1¼	1½	2
Feet Pipe in Coil	15	17	24	35	46
Diameter Cylinder, inches	12¼	14¼	16¾	20¼	24
Height Cylinder, inches	12	14	16½	20	24
Exhaust Openings	2	2½	3	4	5
Horse Power	10	20	30	50	70
Price	20.00	30.00	45.00	80.00	130.00



THE NASON FEED WATER HEATER.

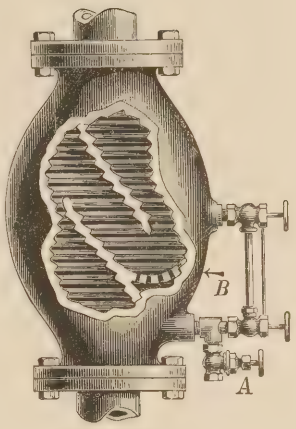
The Hine Eliminator.



HORIZONTAL.

When placed in the main steam line close to the engine the Hine Eliminator is a safeguard against water of condensation reaching the cylinder and wrecking the engine. When placed in the exhaust line within 10 feet of the engine it will extract the oil held in suspension, cleansing the condensation suitable for boiler feed or any other purpose. This Eliminator showed an efficiency of $98\frac{7}{10}$ per cent. in the famous Cornell University test. Our regular patterns are designed for a working pressure up to 100 pounds.

Heavier patterns suitable for working pressure up to 175 pounds at an advanced price.



VERTICAL.

Horizontal Pattern.

Size of Pipe	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Face to Face	10	10	10	10⅞	10⅞	14¼	14¼	16½	16½	17¾	17⅞	20¾	20¾	24⅞	28⅞
Top to Center	2½	2½	2½	3	3	3⅜	3⅜	3¾	3¾	4	4¾	6⅜	6⅜	8¼	11⅛
Center to Bottom	12⅞	12⅞	15	19	19	21¼	21¼	22½	22½	23	23¾	27	27	31⅛	33¾
Size of Drip	¾	¾	¾	¾	¾	1	1	1	1	1¼	1¼	1¼	1¼	1½	1½
Price	$20	20	25	30	35	45	52	64	72	83	104	120	145	185	225

Vertical Pattern.

The Vertical pattern is built on the same general principle as the Horizontal and is largely used for live steam purposes—placed immediately over the throttle. In many lines of exhaust pipe it is also more convenient to use than the horizontal.

Size of Pipe	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Face to Face	16½	16½	20⅛	21	21	22	22	26½	26½	28½	28½	36	36	43⅜	50
Diameter of Body	8	8	8⅝	11⅛	11⅛	12⅛	12⅛	15⅛	15⅛	17⅛	17⅛	20⅛	20⅛	28	34
Size of Drip	¾	¾	¾	¾	¾	1	1	1¼	1¼	1¼	1¼	1½	1½	1½	1½
Price	$20	20	25	30	35	45	52	64	72	83	104	120	145	185	225

Prices include Companion Flanges, Bolts and Water Gauge.

In Attaching and Using the Hine Eliminator

FIRST.—See that the inlet of the Horizontal Eliminator is on the side indicated by the letter I for inlet.

SECOND.—Where the Eliminator is used on exhaust for extracting oil, locate, if space permits, from 10 to 15 feet away from the engine or pump, and if the engine is high speed, or if the combined exhausts from two or more engines pass through it, get further away if possible. It is best not to cover the Eliminator when used on the exhaust pipe as an oil extractor.

THIRD.—When used for separating water from live steam, locate as close to the engine, pump or other point of delivery as possible. In this application it should be covered to avoid all possible condensation.

FOURTH.—Place valve well down on the drip pipe. The object in putting on the gauge glass is to show that no water accumulates in the body of the Eliminator. It is therefore all important that the valve, while in operation, be kept open far enough to let off the dirty water and oil, and when attached to live steam pipe for separating water it is best the drip should be carried into a Nason Trap, and valve left wide open. The valve being open will provide for any carrying over of water, and a Nason Trap will prevent loss of steam.

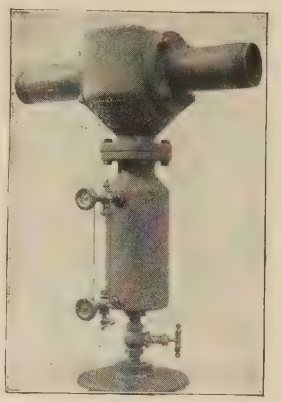
The Cochrane Separators.

The Cochrane Oil (Exhaust Steam) Separators.

For taking cylinder oil out of exhaust steam so that the steam thus purified will be entirely suitable for heating water, by actual contact, for boiler feed and other purposes, or for similar purposes when condensed.

Construction as shown for horizontal pipes in sizes up to and including 12 inches. Furnished complete with companion flanges, gaskets and bolts, gauge-glass and fittings and drip valve. Special construction for larger sizes, and special forms for condensing systems.

Located with some regard to the conditions, and properly drained, these Oil Separators will give most excellent results. More than two thousand of them are in present use.



FORM FOR HORIZONTAL PIPE.
Oil Service.

Standard Cochrane Oil Separators for Horizontal Pipes.

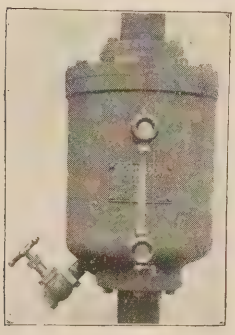
Size	1	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Each	24.00	24.00	28.00	34.00	42.00	50.00	58.00	68.00	76.00	98.00	116.00	134.00	152.00	170.00	200.00

NOTE.—Separators for vertical pipes are of the construction shown below.

The Cochrane Live Steam Separators.

For Taking Water Out of Steam to Protect Engines, and to Give the Greater Economy which Comes from Using Dry Steam.

ORDINARY PRESSURES.—One hundred and twenty-five pounds, or under, for horizontal pipes. Furnished complete with companion flanges, gaskets and bolts, gauge-glass and fittings and drip valves. All sizes up to and including 12 inches.



FORM FOR VERTICAL PIPE.
Live Steam or Exhaust Service.

HIGH PRESSURE SERVICE.—Two hundred pounds, or under, for horizontal and for vertical pipes. Furnished complete with flanges, fittings, etc. All sizes up to and including 12 inches. (See list given below.)

These Separators have acquired an enviable reputation for efficiency in removing both large and small quantities of moisture entrained in steam. Recommended where there is boiler primage, extreme condensation, engines under variable loads, etc., and for all engines as a matter of insurance against wet steam.



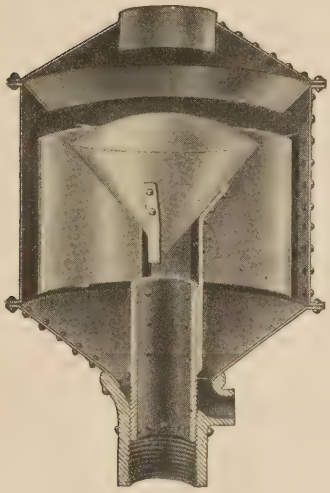
FORM FOR HORIZONTAL PIPE.
Steam Service.

High Pressure Cochrane Steam Separators for Horizontal Pipes.

Size	1	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Each	27.00	27.00	31.00	37.50	46.00	55.00	64.00	75.00	84.00	108.00	128.00	147.00	187.00	187.00	220.00

This list is also applicable to Vertical Separators, either live steam or oil service, ascending or descending current.

Exhaust Heads.



BURT EXHAUST HEAD.

Burt Exhaust Head.

In the Burt Exhaust Head the exhaust steam, after coming through the pipe, strikes the cone immediately over the inlet. This cone separates the steam into the finest particles, condensing some of the vapor. The greater volume of steam rises up to the small projection extending around the top of the head, and is held there for an instant, causing the particles of water and oil to drop by force of gravity down between the double walls on the side and out through the drip below.

Size	1–1½	2–2½	3–3½	4–4½	5	6	7	8	9	10
Height	16	18	20	27	29	31	36	39	43	46
Diameter	10	12	14	16	18	20	22	24	26	30
Drip	¾	1	1	1	1¼	1¼	1¼	1½	1½	2
Each	8.00	10.00	12.00	16.00	20.00	24.00	30.00	36.00	42.00	50.00

Size	11	12	13	14	15	16	17	18	19	20
Height	46	48	51	56	59	62	69	76	79	82
Diameter	30	32	34	36	39	42	45	48	50	52
Drip	2	2	2	2½	2½	2½	3	3	3½	3½
Each	50.00	60.00	70.00	80.00	94.00	100.00	108.00	120.00	132.00	144.00

Robertson Exhaust Pipe Head.

Entraps all grease and water from exhaust steam without creating back pressure. Prevents the rotting of roofs and the spraying of greasy water on sidewalks. Built of heavy galvanized iron, well braced.

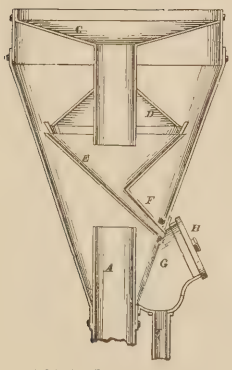
Size	1	1½	2	2½	3	3½	4
Each	18.00	22.00	25.00	28.00	30.00	35.00	40.00

Size	4½	5	6	7	8	9	10
Each	45.00	50.00	60.00	70.00	85.00	105.00	125.00



ROBERTSON EXHAUST HEAD.

Improved Lyman Exhaust Pipe Head.



LYMAN EXHAUST HEAD.

The sectional view shows the connection at the bottom to engine exhaust pipe. As the exhaust steam enters the head, it is deflected on each side to the top, which, being closed to the steam, returns again and escapes through the openings, which are of large enough area to prevent any possible back pressure on the engine, and thence through the upper pipe to the atmosphere.

All the condensation is collected both at the center and sides and conveyed to outside outlet, to which is connected the drip pipe, which conducts the hot condensation wherever desired.

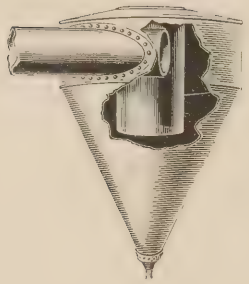
The brass cap on the side pocket is designed to open and remove any grease that may accumulate at any time.

Size	1 or 1½	2 or 2½	3 or 3½	4 or 4½	5	6	7	8	9
Drip Pipe	¾	1	1	1	1¼	1¼	1¼	1½	1½
Each	20.00	25.00	30.00	40.00	50.00	60.00	75.00	90.00	105.00

Size	10	11 or 12	13	14	15	16	17	18
Drip Pipe	2	2	2½	2½	3	3	3½	3½
Each	125.00	150.00	175.00	200.00	235.00	250.00	270.00	300.00

Exhaust Heads.

The Common Sense Exhaust Head.



COMMON SENSE EXHAUST HEAD.

The design of the Common Sense Exhaust Head, simple as it is, reveals a clear understanding of the principle involved in the successful separation of water and steam. A statement of the principle is enough to prove the efficiency of the device. It is well known that centrifugal force is proportional to the weights of the bodies in motion. Therefore, if a mixture of water and steam be given a whirling motion within a circular case the water will be thrown against the sides and absolutely separated from the steam. The dry steam will readily escape through a central opening which the water cannot reach, owing to the opposition of gravity and centrifugal force. Upon this principle the Common Sense Exhaust Head is designed.

A clear idea of the working of the Common Sense may be obtained from the cut. The steam rushes in at the top; entering forcibly at a tangent, it expands immediately; it sweeps around with a whirling motion. The particles of water and grease are thus thrown in contact with the inner walls of the entire head. These walls form a large condensing and collecting area, and extract all the water and grease, which run by gravity to the drip outlets below (so that nothing but dry steam escapes).

The steam inlet joins the drum horizontally and at a tangent. It extends into the head beyond the axis of the discharge pipe. There is but one steam chamber, and that is the entire head. The entire interior area is utilized as a condensing surface.

It will be noticed that the outlet is nowhere near the inlet pipe. An objection to many exhaust heads is that steam enters at the smallest diameter, and right close to the drip pipe. This allows no room for expansion, and in itself forms a powerful back pressure. The precipitating grease and water also fall back on the incoming steam, are suspended in it, and by induction are atomized and finally forced out through the discharge pipe.

Another good feature of the Common Sense Exhaust Head is this: After the first revolution the steam envelops the inlet extension, and in passing over it in the same direction causes an induction The wall of the steam chamber, on account of its exposure to the air, will absorb a large amount of heat from the exhaust steam. This causes considerable condensation, which, in addition to the induction just mentioned, positively prevents back pressure on the piston, and by creating a partial vacuum, adds so much to the effective working pressure of the live steam.

The discharge pipe does a double duty, serving also as the trap. It is very deep, the depth being in all size heads three times the diameter of the steam inlet. It will be seen, therefore, that the steam must make quite a number of revolutions before it reaches the opening of the discharge pipe. By that time it has been divested of every particle of water, oil and grease, and nothing but dry steam escapes to the outer air.

The Common Sense Exhaust Head is a perfect muffler. Actual experience proves this. It will take all the steam that can be shot into it, acting just as quietly and effectively with a 20-inch exhaust as with a 2-inch.

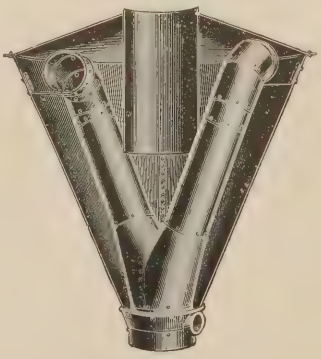
In many other exhaust heads the discharge areas are not large enough to allow free discharge. The steam leaves the head at the same pressure it enters. In the Common Sense Exhaust Heads, up to 12-inch size, the area of the discharge pipe is three times the area of the inlet. Above 12-inch this proportion is gradually reduced. In the largest sizes the proportions are two to one. A Common Sense Exhaust Head cannot be overloaded, nor can it blow up. The steam leaves the head in much greater volume than it enters, and at so low a pressure that it cannot puff. Ample drip outlets take care of the condensation.

The Common Sense Exhaust Heads are made of heavy galvanized iron, the weight and gauge of which are graduated according to size. As no internal pressure can be developed, it follows that the heads can not break up nor blow to pieces. They will not rust; they will withstand all atmospheric conditions, and they will last a lifetime. All joints, seams and attachments are close-riveted and soldered water-tight.

FITTINGS.—The Common Sense Exhaust Heads are furnished with the standard nipples or flanges. Up to and including 5-inch size, nipples are furnished. With 6-inch size and over, flanges are furnished, unless otherwise ordered. If special size flanges are desired instead, they will be furnished drilled to templet, without extra charge, if you send the templet or dimensions with your order.

Size..	1-1½	2-2½	3-3½	4-4½	5	6	7	8	9	10	12	14	15	16	17	18	20
Each....	$20	25	30	40	50	60	75	90	105	125	150	200	235	250	270	300	360

The Sturtevant Exhaust Head



STURTEVANT EXHAUST HEAD.

Is built of heavy galvanized iron, 16 to 20 gauge in medium sizes and heavier in largest sizes. All external joints are close-riveted and soldered, and the internal pipes are double-braced. There are no baffle plates to rattle loose. It acts upon the only proper principle—by centrifugal force—is a perfect separator, and produces no back pressure.

In the Sturtevant Head the steam passes up the interior pipes, is discharged tangentially close to the shell, and is thereby given a vigorous whirling motion. The entrained water—likewise the oil—flies outward, strikes the cool side and trickles down to the outlet at the bottom. The steam, now perfectly dry, finds ready escape through the central opening above. The action is positive and absolute. Perfect separation must be the result. There is no spray; no rotting roofs.

Size..	1-1½	2-2½	3-3½	4-4½	5	6	7	8	10	12	14	16	18	20	22	24	30	36
Each...	$20	25	30	40	50	60	75	90	125	150	200	250	300	360	450	600	900	1200

The "Nason" Steam Traps.

For Steam Pressures of 70 lbs. and Less.



"NASON" TRAP.
Nos. 1, 2 and 3, with Plain Cover.



"NASON" TRAP.
Nos. 4 and 5, with Hand Hole Cover.

The Steam Traps manufactured by the Nason Manufacturing Company have always enjoyed the reputation of being the best of their kind—more extensively known and used than any other—in fact the Standard of Excellence with steam-fitters and engineers in all parts of the country.

Following the demand made by modern steam engineering for higher pressures, it has been thought judicious to divide the Nason Traps into two groups, one for ordinary working steam pressures of 70 lbs. and less; the other for pressures above 71 lbs. and less than 150 lbs. For the lower pressures no change of design has been made, the high standard of construction and workmanship being, as in the past, fully maintained.

These Traps will continue to be known and specified as THE NASON STEAM TRAP.

The "Sidelug" Steam Traps.

For Steam Pressures above 71 lbs. to 150 lbs.

Patented January, 1900.



"SIDELUG" TRAP.
Nos. 1, 2 and 3, with Plain Cover.



"SIDELUG" TRAP.
Nos. 4 and 5, with Hand Hole Cover.

For higher pressures a radical departure in construction of the covers has been designed and patented, consisting of so reinforcing the joints at the inlet and outlet where the steam ports pass from pots to covers, that leakage at or near these points cannot occur, there being no possibility of the gaskets blowing out.

A considerable increase in the size and number of bolts used has been adopted, thus rendering these Traps not only amply equal to the greater pressure imposed upon them, but infinitely better than anything hitherto made in this class of Trap. These Traps are known as the Nason "SIDELUG" Trap, and should be universally specified in all cases where they are to be used under pressures constant at or exceeding 71 lbs.

For facility of access to the sleeve seats and sleeves, the two larger sizes (Nos. 4 and 5), in both "Nason" and "Sidelug" Pattern, are fitted with handhole plates on the covers, which permits of readily getting at the working parts without breaking the main joint.

The "Nason" and "Sidelug" Steam Traps.

Standard Service.

These Traps are recommended for any service requiring the removal of water of condensation without escape of the steam behind it.

For draining the condensation from steam pipes, coils and apparatus employed in steam heating, steam kettles, vacuum pans, mash kettles, steam engine supply pipes and separators, evaporating pans, steam jackets on engines and pumps, ice machine stills, etc.

Pressure Conditions.

In ordering either "Nason" or "Sidelug" Traps it is important that the steam pressures under which they are to be used should be stated.

The standard "Nason" Trap is designed for an extreme pressure of 70 lbs., but where this pressure is to be constant, or likely at any time to exceed this limit, it is necessary to use the "Sidelug" type.

Where the Trap is to be used under extreme low pressure conditions—1 to 20 lbs.—the duty should be specifically stated, in order that a Sleeve Seat of proper area may be supplied. For this duty the standard "Nason" Trap is furnished, but with a larger Sleeve Seat opening than is used for the ordinary service, which is between 20 and 70 lbs.

All Traps issued by us bear tags specifying the pressure for which their Sleeve Seats are fitted. Satisfactory results will not be obtained unless these details are strictly followed.

Trap Connections.

In selecting a Steam Trap of the "Nason" or "Sidelug" pattern for a given duty it should be borne in mind that the size of the inlet in no way governs the capacity of the Trap, as the full area of the inlet is only used when the Top Valve is opened for the purpose of "blowing" through in starting. It will be seen therefore that the pipe entering Trap at "inlet" may be arranged to suit our standard connections without affecting the operation of the Trap—care being taken that a Trap of proper capacity is selected for the work.

Trap Capacity—Standard Service

Reference should be made to the table of Sizes and Capacities, and the size Trap selected which nearest corresponds to the rated capacity of each Trap in square feet of surface, or in lineal feet of one inch pipe.

The capacities specified in our table are based upon the condensation discharged from radiators, wall coils, or similar surface, operating under usual conditions found in a direct heating system.

Trap Capacity—Special Duty.

Where Traps are to be used under conditions varying from those found in a direct coil heating system, such as coil surface under air blast, indirect or submerged surface, sugar pans, steam kettles, evaporators, separators, etc., the rated capacities given in our table must not be used as a guide, as the greatly increased condensation under such conditions would make them misleading. For such special service it is imperative that the maximum condensation for a given time be weighed, and the quantity discharged per minute ascertained, when the size Trap may be selected which corresponds most nearly in capacity to our rating of "Maximum Pounds of Water Per Minute" discharged from the surface to which it will be connected.

Should the Duty Exceed

the capacity of the largest Trap listed, two or more Traps may be readily placed side by side, connected to a common horizontal header and operated as one Trap, in order to obtain the necessary trappage capacity.

Interchangeability of Parts.

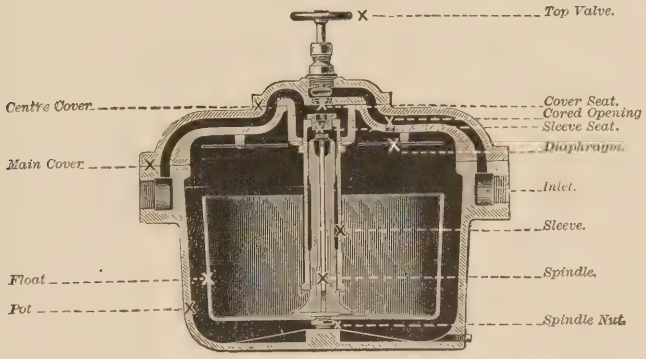
In the "Nason" and "Sidelug" Traps all parts are interchangeable, being made in special machinery designed for the purpose; parts which may require renewal can therefore be ordered with the certainty that they will accurately fit and duplicate the originals.

This feature is not possessed by the spurious imitations.

Avoid Substitution.

All Traps manufactured by us bear the name "Nason Manufacturing Company" on their covers, and purchasers are requested to insist on this mark, as several inferior and light imitations are on the market which are in many cases openly offered and sold as "Nason" Traps. These spurious imitations are deficient in boltage, and often distinctly unsafe under the high pressure conditions which now so generally obtain, and the general dissatisfaction resulting from their use is causing prejudice against those of our manufacture.

The "Nason" and "Sidelug" Steam Traps.



Section of Nason and Sidelug traps, with names of all parts. These names should invariably be used in ordering trap repairs.

Construction of the "Nason" and "Sidelug" Traps.

Reference to the sectional cut shows the construction of the Nason traps as follows :

A cast iron reservoir or pot closed with a cover provided with two cored passages contains a float which is fitted with a spindle for its guidance. A housing or sleeve is screwed centrally into the under side of the cover and within it the float spindle slides smoothly, permitting a short vertical motion. The top of the float spindle is ground flat, and its upward movement is arrested by coming in contact with a bronze plug having a central opening, the two surfaces thus constituting a discharge valve for these traps.

One of the cored passages in the cover alluded to is for the discharge of water from the traps after passing through the main valve, and the other serves as a by-pass, to permit any large volume of air or water to be blown through, when starting, without going through the cylinder and discharge valve. A valve located externally in the cover gives entire control of this action.

Operation.

Care being taken that the trap is in all cases placed below the surface from which water of condensation flows, the discharge enters at the point marked "Inlet," and passing through the "cored opening" into the body of the trap, a diaphragm above the float diverts the water of condensation into the pot, where, gradually rising, it first raises the float, thereby closing the discharge valve, and then after reaching the top of the float it flows into it. When the float has nearly filled, its weight becomes such that it overcomes the tendency of the discharge valve to remain closed, being held there by steam pressure, and the float drops to the bottom, thereby opening the valve. Acting on the surface of the water, the steam pressure immediately drives it up through the sleeve, discharge valve, and thence by way of the cored passage to the outlet.

When the float has been nearly emptied it becomes so light that it is again raised by the water about it, thus closing the valve, and the operation is repeated.

This action it will be seen is purposely intermittent, which necessitates that the valve shall be either wide open or completely closed, an advantage which entirely obviates the "wire drawing" process to which all other traps of the ball-cock type are subject. The life of the valve is thus indefinitely prolonged, and danger of leakage at this point reduced to a minimum.

As will be seen, the Nason and Sidelug Traps have no motive power within themselves, and they are not Return Traps; water must run into them by gravitation, and the discharge from them should preferably be into the open air or a hot-well.

Under certain conditions the discharge may be considerably elevated above the level of the trap, such lift being governed by the steam pressure to which it is subjected ; but in these cases an automatic appliance for removing air which accumulates between the steam surface and the traps must be provided, and such service is not generally recommended.

The "Nason" and "Sidelug" Steam Traps.

DIRECTIONS FOR USING THE "NASON" AND "SIDELUG" STEAM TRAPS.

FIRST.—Be sure that the Trap is not to be used for higher pressure than that marked on its tag.

SECOND.—Screw the Valve Bonnet which accompanies the Trap into the hole on top, being careful that before doing so the spindle is backed out as far as possible in order to avoid crushing the seat on the disc.

THIRD.—Place the Trap in all cases below the lowest point which is to be drained.

FOURTH.—Connect the drip pipe from end of coils of apparatus to the opening marked "inlet."

FIFTH.—Open the valve on top for a few minutes to allow the air or excess of water coming from the apparatus to escape.

SIXTH.—When the steam begins to flow in considerable quantity close the valve tight and allow it to remain so while the Trap is in operation. If, while the pressure is on the coils, they become cold, or water stops escaping from the Trap, it is usually due to an accumulation of air. In this case open the valve a few minutes to allow it to escape, and then again close it.

SEVENTH.—While the sleeve seat is open and the Trap is discharging boiling water there is always a large volume of steam liberated at the same time. It should be remembered that the escaping water is always considerably above 212 degrees, and the liberated steam therefore comes from the water and is not due to valve leakage.

EIGHTH.—The Trap is tested and guaranteed to work up to the pressure marked on its tag. If more, or much less, is required, it should be so specified, in order that the valve may be adapted to such requirements.

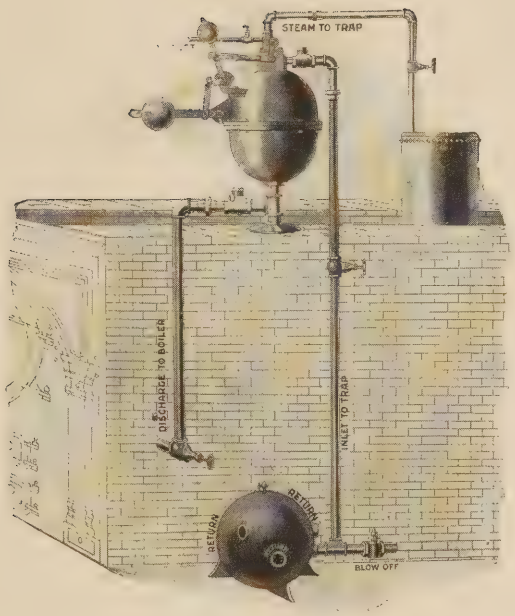
NINTH.—This Trap will discharge water from its outlet a few feet above the elevation on which it is placed—depending on the pressure; but it will NOT RETURN WATER TO THE BOILER—not being made for this purpose.

TENTH.—If the apparatus or Trap is to be left inoperative at any time when the temperature is likely to go below the freezing point, remove the plug at the bottom, in order to allow the water contained in it to escape, and thus avoid damage to Trap.

SIZES, DIMENSIONS, CAPACITIES AND LIST PRICES.

Number of Steam Trap		1	2	3	4	5
Size of Pipe Connections	inches	½	¾	1	1¼	1½
Diameter outside of Flanges	"	10¾	14¼	15¾	19	24¼
" of Cylinder	"	8	10½	12	14	18
Height to top of Valve	"	11	14	16¼	18½	23½
" " " " Cover	"	8	10	12	41	15½
Maximum discharge lbs. water per minute		2	5	8	12	20
Greatest number of square feet of surface to which it should be applied		350	900	1400	2000	3500
Greatest number of lineal feet of 1-inch pipe surface to which it should be applied		1050	2700	4200	6000	10500
Weight, "Nason," pounds		40	80	113	176	336
" "Sidelug," pounds		47	92	125	212	343
Price, "Nason"		16.00	20.00	27.50	42.50	70.00
" "Sidelug"		16.85	21.30	29.25	45.50	74.75

The Champion Return Steam Trap and Boiler Feeder.



CHAMPION RETURN STEAM TRAP.
Showing Connections to Boiler.

For automatically returning water of condensation from steam heating systems or steam appliances of any description directly back into boilers at the highest attainable temperature due to the pressure under which steam was condensed.

These Return Traps are great economizers in fuel, water and repair bills.

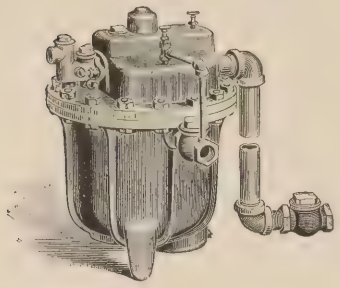
These Traps will give perfect satisfaction provided they are set up according to our printed directions. On the market for many years as a standard appliance for the purpose named and many hundreds in successful operation. They should be placed in a situation where bottom of Trap will be at least three feet above water line of boiler and work best where the pressure is five pounds or over. In making connections high grade horizontal swing check valves must be used as it is very essential that these items be perfectly tight.

In ordering special devices it should be borne in mind a sketch, however rough, with measurements, often conveys valuable information and should accompany inquiries and orders wherever possible.

Size	1	2	3	4
Capacity, lineal feet 1-inch pipe	4 to 6000	8 to 10000	15 to 20000	30 to 40000
Inlet Connection	1	1¼	1½	2½
Discharge Connection	1½	2	2½	3 or 4
Price, Traps only	**100.00**	**150.00**	**200.00**	**300.00**
Extra for Receivers, each	**10.00**	**16.00**	**24.00**	**40.00**
Outlet of Receivers	1	1¼	1½	2½

Receivers are extra and not furnished with Traps unless so ordered.

The Albany Return Steam Trap.



GENERAL VIEW.

Class A, Improved 1898 Pattern.

Many Uses of the Return Trap.

The Return Trap makes a good boiler feeder. It will take the place of a steam pump in returning the condensed water from a heating system back to the central plant. It will also take the place of a pump and governor in returning the water from steam heated systems using very low steam pressure, by using two traps.

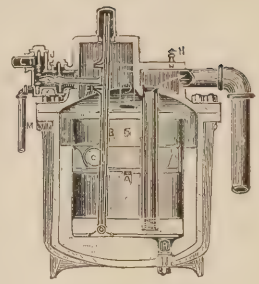


Fig. 2.
SECTION.

Operation of the Trap in Connection with a Heating System.

In a general way the operation of the Trap in connection with a heating system will be: The water of condensation being forced from the coils (or heating surface) through the inlet check-valve and opening (H) (see Fig. 2) into the space (G) between the bucket and outer case, the bucket (F) will begin to move upwards, caused by the floating power of the water contained between the bucket and the casing when said bucket is tilted sufficiently. The ball weights (C) will roll on the channeled guides (A) to the side of the bucket that is adjacent to the hinge joint, thereby providing a sudden impulse in the tilting movement.

The tilting movement just referred to will, through the action of the valve lever (I), bring the inlet equalizing steam valve (J) on its seat, at the same time through the action of the valve lever it will lift the exhaust valve (K) from its seat.

The water will continue to flow through the opening (H) into the space (G), and when the space is filled it will flow over the upper edge of the bucket. When the bucket has become nearly filled with water the preponderance of weight causes the bucket to tilt downward, causing the ball weights to roll on the guides to the opposite side of the bucket, thereby providing a sudden impulse downward, and in making such downward movement the upper tappet (E) on the valve rod (B) will take against the inner end of the valve lever (I) and suddenly open the inlet equalizing steam valve (J) for the admission of boiler steam. After the pressures have been equalized between the trap and the boiler the water will begin to gravitate out of the bucket through the syphon pipe (D), passing through the pipe (D) and discharge check-valve into the boiler. After the water has been nearly all discharged from the bucket, the water between the bucket and outer case will cause the bucket to move upwards. When said bucket is tilted sufficiently, the ball weights (C) will again roll to the side of the bucket adjacent to the hinge joint, and as before explained suddenly close the inlet steam valve. After a few seconds from condensation (or the escape of steam through the exhaust opening M) the pressure in the Trap case will become enough reduced so that the condensed water from the system will again enter the space (G) and will continue on repeating the operations as before described.

Operation of the Trap When Used to Remove Condensed Water from Re-Heaters and Oil Separators When in Connection with Condensing Engines or Other Vessels Containing a Vacuum.

In cases where the Trap is used to remove the condensed water from re-heaters used in connection with compound engines having a vacuum in the re-heaters, the use of the exhaust valve is very essential. When used for this purpose the exhaust opening is piped to connect with top side of the re-heater. The operation of the Trap in connection with the re-heater would be to place the Trap below the re-heater, and from the condensed water outlet of the re-heater connect the drip to the inlet check-valve of the Trap, the exhaust pipe being connected with the top of the reheater, and when the exhaust valve is open there will be an open connection between the vacuum space in re-heater and the trap. The condensed water will then gravitate down through the drip pipe and inlet check-valve into the Trap, and when the bucket has filled with water it will sink and first shut the exhaust valve and then open the steam valve, admitting sufficient steam to make a pressure in the Trap greater than the atmosphere. This pressure will force the water out of the bucket through the syphon discharge pipe and discharge check-valve into the atmosphere, or tank, if so desired. After the water has been discharged from the bucket it will be tilted in the opposite direction and first close the steam inlet valve and then open the exhaust valve to again establish a vacuum in the Trap so that the accumulated condensed water will again fall into the Trap and repeat its operations.

The valves are lifted free and clear from their seats simply by mechanical force, thus allowing all scale, dirt or other sediment to be easily blown out after the Trap has been once put in operation.

We would especially call attention to the fact that the Improved Trap is specially adapted for returning the condensed water from Steam Jacketed Cylinders. Also from Steam Supplying pipes to Steam Engines using high pressure.

The Traps are all tested before leaving the works under a pressure of 150 pounds, and if a higher pressure than this is desired we can furnish special Traps for such desired pressures, and like our other Traps, we use no packing in making the joints, as all joints are scraped and fitted metal to metal.

Bottom of Trap Should Set About Three Feet or More Above Water Line in Boiler.

Size Trap.	Capacity in Lineal Feet of 1-in. Pipe.	Inlet. Inches.	Outlet. Inches.	Gal's. Capacity Per Minute.	Price.
No. A 1	15,000 to 30,000	1½	2½	10 to 15	200.00
No. 1	8,000 to 12,000	1½	2	4 to 8	150.00
No. 2	4,000 to 8,000	1	1½	3 to 6	100.00
No. 0	500 to 1,000	½	1	½ to 1	50.00

The capacities given above are only approximate.

Full information as to the purpose for which the Trap is to be used should accompany each order, including the distance between the water line of the boiler and the lowest radiator to be drained.

The Nason Glue Heater.

Steam Application.



STEAM GLUE HEATER.

This type of Heater consists of a cast iron box with cover, in which there are holes of suitable size to receive the combination of pots shown in our table.

The heating surface consists of horizontal tubes screwed into a header, each of which has a smaller tube within it through which the steam enters, and a positive circulation—even under low pressure—is insured.

Exhaust steam being frequently used for heating purposes, the tubular form of the heating surface gives abundant heating area, and its efficiency is so greatly increased thereby that as good results are reached as if high pressure steam were connected to the Heater.

Three sizes are made, numbered 1, 2 and 3, and below will be found a list of the regular sizes and number of pots which are commonly made for each Heater.

Extra pots of the several sizes and materials are kept in stock and furnished as wanted.

Size	1	2	3
Dimensions of Covers, in.	12 x 17	17¾ x 23	17¾ x 30
Height of Heater, in	8	9½	9½
Sizes and Combinations of Pots for which we can supply Covers.	One 8 in. only One 9 in. only Two 5 in. only	Four 5 in. only Six 5 in. only Four 6 in. only One 12 in. only Two 9 in. only One 10 in. and Two 5 in. only One 10 in. and Two 6 in. only One 8 in. and Two 5 in. only One 8 in. and Two 6 in. only	Eight 5 in. only Two 12 in. only One 10 in. and Four 6 in. only One 12 in. and Four 5 in. only Two 10 in. and Two 5 in. only
Steam Heaters without Pots, each	10.00	16.00	20.00

PLEASE NOTE.—Each line in this table represents the actual number and size of pots that can be supplied in that combination. In ordering do not combine or confuse any two of the lines in the table.

Copper Pots.

Diameter, inches	5	6	7	8	9	10	12
Depth, "	5	5¼	7	6¾	7½	8	8
Capacity, Quarts	1¾	2½	4½	6	8	11	16
Each	2.00	2.25	2.50	3.50	4.00	4.50	5.50

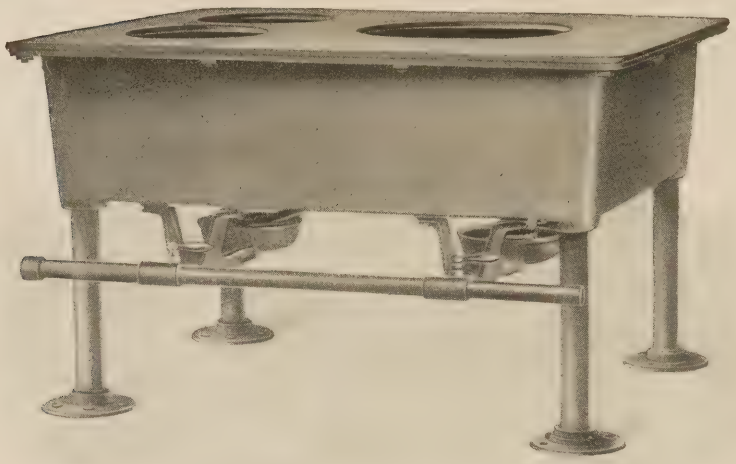
Galvanized Iron Pots.

Made in one size only, 5-inch diameter, 4⅝ inches deep.

Capacity, Quarts	1½
Each	.75

The Nason Glue Heater.

Gas Application.



GAS GLUE HEATER.

This illustration introduces a Heater which we have designed for glue, paste, etc., and in which gas is used as the heating agent.

The construction of the cast iron box is similar to that used in our Steam Heater, except that it is made shallower, with a view to securing the greatest possible efficiency.

This Heater is made in three sizes, each of which carries the same dimensions of covers and combinations of pots as listed for the steam apparatus.

The burners used are of the most approved design, and tests which we have made show a very high heating efficiency with an economical consumption of fuel.

The No. 1 Heater is equipped with one burner, the No. 2 with two burners, and the No. 3 with three burners. The burners on the Nos. 2 and 3, having individual cocks, can be operated together, or cut out, as may be required.

Where low pressure steam is not available, the utility of this Heater will be readily appreciated.

Each Heater is furnished with iron pipe legs and flanges to the standard height shown in table below, which height is adapted for bench use.

Where it is desirable to have the Heater stand on the floor, legs and flanges will be supplied to make total height of Heater 3 feet from the floor, for which an additional charge of 1.50 will be made for each Heater so equipped.

Size	1	2	3
Dimensions of Covers, in.	12 x 17	17¾ x 23	17¾ x 30
Height of Heater for Bench, in.	14	14	14
Sizes and Combinations of Pots for which we can supply Covers	One 8 in. only One 9 in. only Two 5 in. only	Four 5 in. only Six 5 in. only Four 6 in. only One 12 in. only Two 9 in. only One 10 in. and Two 5 in. only One 10 in. and Two 6 in. only One 8 in. and Two 5 in. only One 8 in. and Two 6 in. only	Eight 5 in. only Two 12 " " One 10 in. and Four 6 in. only One 12 in. and Four 5 in. only Two 10 in. and Two 5 in. only
Bench Heaters, without Pots, each	7.50	11.50	14.40

PLEASE NOTE.—Each line in this table represents the actual number and size of pots that can be supplied in that combination. In ordering do not combine or confuse any two of the lines in the table.

Copper Pots.

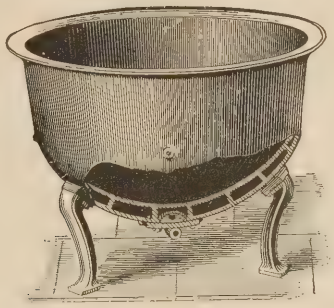
Diameter, inches	5	6	7	8	9	10	12
Depth, "	5	5¼	7	6¾	7½	8	8
Capacity, quarts	1¾	2½	4½	6	8	11	16
Each	2.00	2.25	2.50	3.50	4.00	4.50	5.50

Galvanized Cast Iron Pots.

Made in one size only, 5-inch diameter, 4⅝ inches deep.

Capacity, quarts	1½
Each	.75

Cast Iron Seamless-Jacket Steam Kettles.



Style C.

SEAMLESS CAST IRON STEAM KETTLE.

These Kettles are tested under 130 to 150 pounds pressure. They are cast in one piece and are entirely without joints. Supplied with outlet or draw-off at bottom if desired, at an extra cost of 1.50 and upward, according to design.

Kettles will be furnished without draw-off, unless otherwise ordered.

Table of Sizes and Capacities.

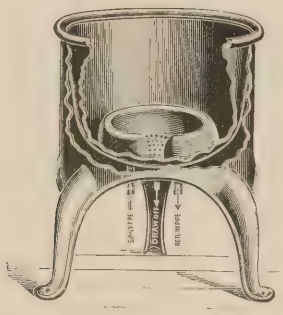
Gallons Capacity.	Inside Diameter. Inches.	Depth Inside. Inches.	Total Height. Inches.	Price with Legs.
1	7¾	7	10¼	3.75
4	12	8¼	18	8.40
5	16¼	8½	19¼	10.50
10	16½	12	21½	19.00
20	30	13	21½	30.00
30	30¾	17¼	27	39.00
40	32	19½	28	52.00
50	32¾	22½	31⅜	65.00
65	39¼	18½	30½	76.00
80	40½	23⅛	34	85.00
100	41⅜	26	37½	105.00
125	47⅜	26½	38¾	127.00

Gallons Capacity.	Inside Diameter.	Depth Inside.	Top to Lugs.	Price with Brackets.
150	48	30¼	25¾	146.00
175	53½	27¾	25½	159.00
200	54	30¼	22¾	176.00
250	60	31	24½	220.00
300	62	34½	28	248.00
350	64	39	32½	275.00
400	68⅜	38	31½	300.00
500	71	42⅝	35	350.00

Kettles of 1 gallon to 125 gallons inclusive, are surported on legs. Above 125 gallons are cast with brackets, unless ordered otherwise.

These Kettles are furnished to order with sleeve outlet draw-off threaded for standard pipe above 2 inches, price, 4.00 to 10.00; or with plain gate valve 4 inches diameter, or over, closing against its seat by the action of an inclined catch, price, 8.00 to 15.00; also Register Valve, 15.00 to 25.00; Annular Opening Valve, 15.00 to 25.00; Drop Valve, 20.00.

Cast Iron Seamless-Jacket Steam Kettles.



Style D.
SEAMLESS CAST IRON STEAM KETTLE.

Each Kettle is fitted with a bottom outlet for drawing off the contents. The outlet is covered by a removable strainer. The outer casing or jacket forms a substantial support for the Kettle, and at the same time prevents, in a measure, loss of heat in the room.

The illustration shows C-shaped Steam Chamber, and location of inlet and outlet.

The Steam Chambers are tested at 80 pounds for ordinary service, but for use with very high pressures they can be specially tested as high as required.

Table of Sizes and Capacities.

Nominal Capacity. Gallons.	Outside Diameter.	Depth. Inches.	Extreme Height.	Without Cover.	Extra for Galv. Cover.	Extra for Copper Cover.
10	21	13½	30	25.00	11.50	20.00
15	23½	15	30½	32.00	14.25	24.50
20	25¼	16	31¾	38.00	16.50	28.50
25	28½	17½	33	45.00	19.00	32.00
35	31¼	18½	34½	58.00	23.00	38.00
45	33½	20	35	72.00	26.00	43.50
55	36½	21	36	84.00	29.00	48.50
65	40½	22½	37	96.00	32.00	53.50
80	43½	24	38½	116.00	36.00	59.50
100	47	27½	38½	142.00	38.00	66.00
125	51	31½	45	175.00	42.00	75.00
160	55	34½	47	220.00	46.00	82.00
200	59	36½	48	275.00	52.00	90.00

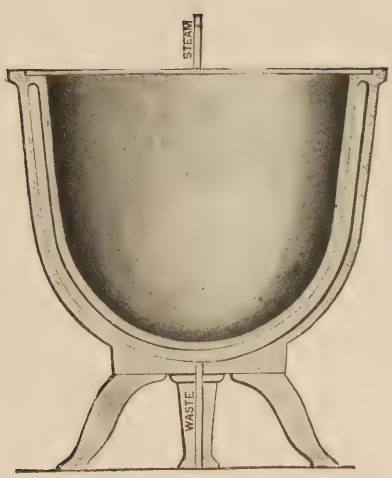
By arranging the Steam Chamber so near the bottom of the Kettle, its entire heating power is utilized, even if the Kettle is only partly filled. The heating surface being placed within the Kettle the entire heat of the steam is directly applied to the contents, giving it great efficiency and economy.

Incrustation, or adherence of certain materials to the inside of Kettles when boiling is nearly, or entirely avoided, in this type of Kettle.

Steam Kettles.

Cast Iron Full Jacket Kettles.

Style F.



Style F.
CAST IRON FULL JACKET STEAM KETTLE.

Gallons.	Complete, Except Covers.	Complete, and with Loose Covers.	Complete, and with Heavy Galvanized Iron Covers and Brass Hinges and Handles.	Complete, with Heavy Copper Cover and Brass Hinges and Handles.
10	45.00	50.00	56.00	65.00
15	50.00	55.00	64.00	71.00
20	65.00	72.00	78.00	90.00
25	78.00	86.00	84.00	106.00
30	90.00	100.00	109.00	120.00
40	105.00	120.00	126.00	140.00
50	117.00	134.00	140.00	156.00
60	130.00	150.00	154.00	173.00
75	156.00	165.00	182.00	204.00
80	170.00	180.00	201.00	222.00
100	205.00	225.00	238.00	262.00
125	230.00	250.00	266.00	295.00
150	286.00	300.00	325.00	355.00
200	348.00	360.00	392.00	426.00

Half Jacket Kettles.

Style G.

10	28.00	34.00	38.00	48.00
15	36.00	52.00	50.00	57.00
20	44.00	50.00	60.00	68.00
25	50.00	56.00	66.00	76.00
30	55.00	64.00	72.00	85.00
40	60.00	68.00	80.00	94.00
50	72.00	80.00	90.00	100.00
60	80.00	88.00	98.00	108.00
70	88.00	96.00	108.00	130.00

Copper Jacket Kettles.

Style H.

Gallons.	Complete with Stand, less Cover.	With Stand and Heavy Copper Loose Covers.	With Stand and Copper Cover, with Brass Hinges and Handles.
20	84.00	100.00	120.00
30	100.00	110.00	130.00
40	114.00	120.00	140.00
50	130.00	140.00	160.00
60	140.00	156.00	178.00
70	160.00	174.00	200.00
80	185.00	196.00	220.00
100	225.00	240.00	276.00

Copper Steam Jacket Kettles for Starch and Pastry Boiling.

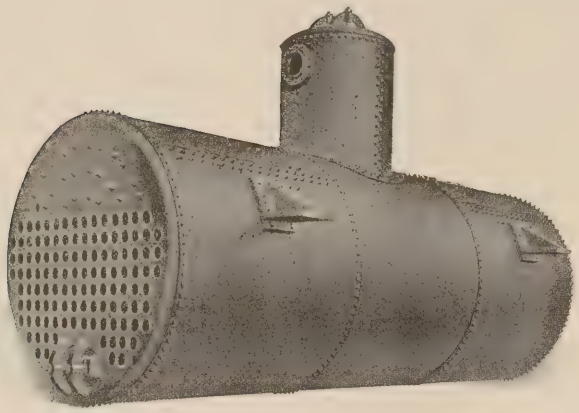
Style I.

Gallons	3	5	8	10	15
Each	26.00	30.00	38.00	46.00	60.00



Style H.
COPPER JACKET KETTLE.

The Nason Horizontal Tubular Boiler with Dome.



Including the Following Cast Trimmings:

One Full Flush Front.
One Straight Dead Plate.
One set Fire Arches.
One set Standard Side Buckstays.
One rear ash Cleaning-out Door and Frame.
One oval Stack Plate.
Anchor Bolts and Binder Rods.
Four Wall Plates and Rollers.
Tupper Pattern Grate Bars.
Two Grate Bearers.

Extra—Not Included:

Pop Safety Valve, Pressure Gauge, Water Column with Gauge and Cocks, Check, Stop and Blow-off Valve.

Horizontal Tubular Boilers.

Number of size	1	2	3	3½	4	5	6	7	7½	8	9	10
Horse Power as usually rated	10	12	15	20	20	25	30	35	40	40	45	50
Diameter of Boiler, in inches	30	30	36	36	42	42	44	44	44	48	48	54
Length of Tubes used, in feet	7	8	8	10	8	10	10	12	14	12	14	12
No. of Tubes, 3-inch diameter	20	20	28	28	38	38	46	46	46	52	52	64
Square feet Heating Surface, about	151	185	220	288	305	376	440	526	611	591	687	708
Length of Grates, in inches	36	36	36	42	36	42	42	48	54	48	54	48
Diameter of Dome, "	18	18	20	20	22	22	22	22	22	26	26	30
Height " "	20	20	22	22	24	24	24	24	24	28	28	34
Thickness of Shell, "	¼	¼	¼	¼	9/32	9/32	9/32	9/32	9/32	5/16	5/16	5/16
" Main Heads, in inches	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	7/16	7/16	7/16
" Dome Shell, "	9/32	9/32	9/32	9/32	9/32	9/32	9/32	9/32	9/32	5/16	5/16	5/16
" Dome Head, "	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Diameter of Smoke Stack, "	14	14	16	16	20	20	22	22	22	24	24	26
Length " " " in feet	28	28	28	35	28	35	35	40	50	40	50	40
Weight of Boiler and Britchen, about	1900	2300	2600	2900	3500	4000	4300	4900	5500	6000	6800	7000
" " Fixtures, about	1500	1600	1700	1950	2200	2500	2600	2700	3000	3400	3500	3600
Wt. with Full Front and Fixt., about	4400	4900	5300	5800	7000	7700	8400	9000	10000	10200	11500	12000
Bare Boiler with 4 Wall Brackets	$203	214	243	260	298	332	370	416	468	490	545	584
Boiler with Cast Trimmings	321	332	366	383	437	471	509	561	616	675	732	812

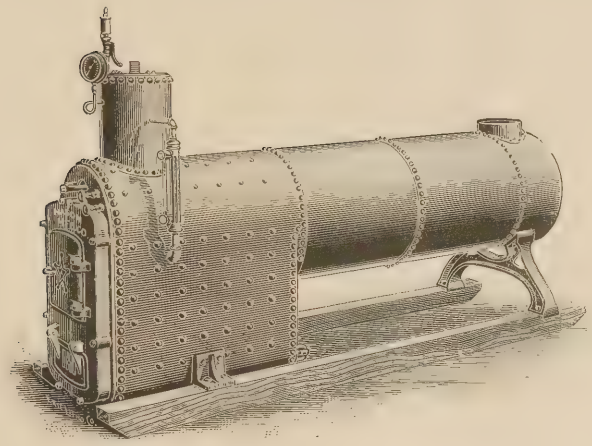
Number of size	10½	10¾	11	12	13	14	15	15½	16	17	18	19
Horse Power, as usually rated	60	65	60	70	80	90	100	110	125	150	175	200
Diameter of Boiler, in inches	54	54	60	60	60	66	66	66	72	72	78	84
Length of Tubes used, in feet	15	16	12	14	16	15	16	18	16	18	18	18
No. Tubes, 3-inch diameter	64	64	82	82	82	98	98	64	120	84	88	108
Square feet Heating Surface, about	880	940	885	1028	1172	1296	1377	4-in.Tbs.	1660	4-in.Tbs.	4-in.Tbs.	4-in.Tbs.
Length of Grates. in inches	54	54	48	54	54	54	54	60	54	60	60	60
Diameter of Dome, "	30	30	32	32	32	36	36	36	36	36	36	36
Height of Dome, "	34	34	36	36	36	40	40	40	40	40	40	40
Thickness of Shell, "	5/16	5/16	11/32	11/32	11/32	3/8	3/8	3/8	7/16	7/16	7/16	7/16
" Main Head, in inches	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	1/2	1/2	1/2	1/2
" Dome Shell, "	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
" Dome Head, "	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Diameter of Smoke Stack, "	26	26	28	28	28	30	30	30	34	36	40	44
Length of Smoke Stack, in feet	50	60	40	50	60	60	60	60	60	60	60	60
Weight of Boiler and Britchen, about	8200	8600	9000	9900	11000	12700	13000	14700	16000	17300	21000	25000
" " Fixtures, about	3800	3800	4000	4500	5000	5000	5000	5000	6000	6200	7000	8000
Wt. with Full Front and Fixt., about	13500	13900	14500	16000	17000	19000	20000	21700	24000	25000	30000	35000
Bare Boiler with 4 Wall Brackets	$682	718	723	795	871	994	1037	1140	1250	1428	----	----
Boiler with Cast Trimmings	912	950	978	1056	1137	1305	1353	1459	1575	1752	----	----

These Boilers can be made with or without Domes, and with manhole in Dome or Front Head.

Every Boiler is thoroughly tested under 150 pounds hydrostatic pressure, and designed for 100 pounds working pressure.

NOTE.—The size of Stack and the proper length to use is designated for each size Boiler, but cost of Stack is not included in list prices. For prices for Stack and Trimmings see table of Vertical Boilers.

The Nason Portable or "Water Bottom" Boiler.



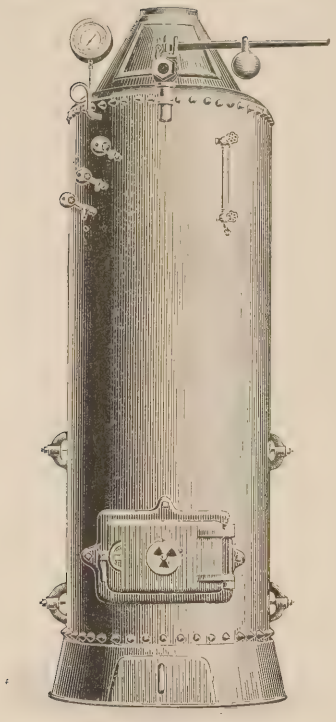
Made of the best brands of steel. No brick linings are required in the furnace. All parts exposed to fire are heating surfaces, and protected by water space around the fire, which forms a perfect safeguard against burning the steel. This water space also secures free circulation of water and allows all sediment to settle below the fire line. A fusible plug is placed in the crown sheet, which will melt and allow steam to extinguish the fire in case of low water. In addition to the blow-off valve, hand-hole plates are provided in suitable places for cleaning. The fronts are easily removed, giving free access to the flues and fire box, and are so constructed to allow for contraction and expansion, thereby preventing cracking. The door liner is not bolted or riveted to the door, and is easily removed. The draft door hangs on a hinge, and has a slide damper to more easily regulate the fire. The Boiler is well stayed, braced and riveted, has steel dome, and is tested at 150 pounds hydrostatic pressure per square inch.

The Nason Portable or "Water Bottom" Boilers.

Size	0	1	2	3	4	5	6	7	8	9	10	11
Horse Power	6	8	10	12	15	20	25	30	35	40	50	60
Diameter of Boiler, inches	26	28	30	32	32	34	36	36	40	40	40	44
Length of Furnace, "	34	36	38	38	44	52	52	52	52	60	60	60
Height of Furnace, "	29	32	34	38	38	38	40	40	44	44	44	48
Width of Furnace, "	21	22	24	26	26	28	30	30	34	34	34	38
Thickness of Shell and Outside of Fire Box, inches	1/4	1/4	1/4	1/4	1/4	1/4	1/4	9/32	9/32	9/32	9/32	9/32
Thickness of Furnace Plates, inches	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
Thickness of Tube Plates, inches	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Number of 3-inch Tubes	17	20	22	26	26	30	34	34	40	42	42	48
Length of Tubes, inches	60	66	72	72	78	90	96	102	102	120	144	144
Diameter of Stack "	12	14	14	15	15	16	18	18	20	20	20	22
Length of Stack, feet	18	20	20	20	20	24	24	30	35	35	40	40
Boiler with Cast Front on Skids	$227	236	260	285	297	332	366	378	429	467	500	574
Grates	7	8	9	10	13	17	18	18	21	27	27	30
Steam Gauge	3	3	3	3	3	3	3	3	3	3	3	3
Water Gauge and Columns	4	4	4	4	4	4	4	4	4	4	4	4
Gauge Cocks	1	1	1	1	1	1	1	1	1	1	1	1
Whistle and Pipe	3	3	3	3	4	4	4	4	4	5	5	5
Safety Valve	3	3	3	3	4	4	7	7	7	9	9	9
Blow Off Valve	1	1	1	1	1	1	2	2	2	2	2	2
Check Valve	1	1	1	1	1	1	1	1	1	2	2	2
Stop Valve	1	1	1	1	1	1	2	2	2	2	2	2
Guys	1	1	1	1	1	1	1	2	2	2	2	2
Stack	9	10	11	12	12	15	17	24	28	28	31	35
With Fixtures, Complete	261	272	298	325	342	384	426	446	504	552	588	669
Extra for Water Front over cast	24	25	25	25	25	28	28	28	31	31	31	32
With Leader Injector, Fitted	12	13	15	15	20	20	20	20	22	22	25	25
Boiler with Cast Front, Complete on Wheels	440	460	490	520	550	650	690	720	760	840	910	990
Shaking Grates, Extra over Regular	22	22	22	24	24	24	30	30	35	35	40	40
Shipping Weight, Complete	3110	3315	3860	4425	4610	5505	6210	6595	7800	8775	9425	10350

Water Front and Bottom Portable Boilers.

These Boilers are made to same specifications as the Cast Front Portables, except that the furnace is four inches shorter, due to the water space and projection of casting being taken from its length. There is a slight difference in price.



VERTICAL STEEL BOILER.

The Nason Vertical Steel Boilers With Full Length Tubes.

All our Vertical Boilers are made of steel throughout, and the longitudinal seams of the shells are all double riveted.

The tubes are in all cases the best American lap-welded full-weight. We use no imported tubes, and none of the re-rolled tubes that occasionally find their way into otherwise good Boilers.

Boilers 24, 30 and 36 inches in diameter have two, and all the larger sizes three hand holes in their water leg around the fire, and the same number over the crown sheet.

Every Boiler is subjected to a trial pressure before leaving our works of 150 pounds cold water, and are designed for a steam working pressure of 100 pounds.

The Fixtures and Fittings are all heavy and substantial. We use only first-class Gauges, Cocks and Valves, and attach them to the Boiler at what we believe to be the most convenient point, and are as follows:

Base, Grates, Hood, Steam Gauge, Water Gauge, Gauge Cocks, Safety Valve, Blow-off Valve, Check and Stop Valve.

The Nason Vertical Boilers.

Number of Size	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16*
Horse Power as usually rated	4	5	6	8	10	12	15	18	20	25	30	35	40	45	50	60
Diameter of Boiler, in	24	24	24	30	30	30	36	36	36	42	42	42	48	48	48	54
Height of Boiler, ft	4	5	6	5	6	7	6½	7	8	7¼	8¼	9¼	8½	9	10	9
Diameter of Furnace, in	20	20	20	25	25	25	31	31	31	37	37	37	43	43	43	48
Height of Furnace, "	24	24	24	27	27	27	27	27	27	27	27	27	30	30	30	30
Thickness of Shell, "	¼	¼	¼	¼	¼	¼	¼	¼	¼	9-32	9-32	9-32	5-16	5-16	5-16	5-16
Thickness of Heads, "	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜	⅜
Thickness of Furnace Plate	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2	No.2
Length of Tubes	24	36	48	33	45	57	51	57	69	60	72	84	72	78	90	78
Number of Tubes (2-in. diameter)	28	28	28	48	48	48	68	68	68	92	92	92	128	128	128	172
Diameter of Stack required, in	12	12	12	14	14	14	15	15	15	18	18	18	20	20	20	24
Weight of Boiler, without fix., about	900	1000	1150	1150	1500	1700	2100	2300	2600	3000	3400	3800	4400	4600	5000	5600
Weight of Boiler Fixtures, "	400	400	400	550	550	550	850	850	850	1200	1200	1200	1700	1700	1700	2300
Blr with fix &fit. without smoke pipe	116	127	140	161	179	197	229	247	272	316	343	368	454	476	520	594
Boiler with base, grates & hood only	102	114	126	147	165	182	212	231	256	297	323	348	431	454	497	571
Boiler only	88	100	112	128	146	164	188	206	231	264	290	315	385	408	451	520

Smoke Stacks, Guys, Etc.

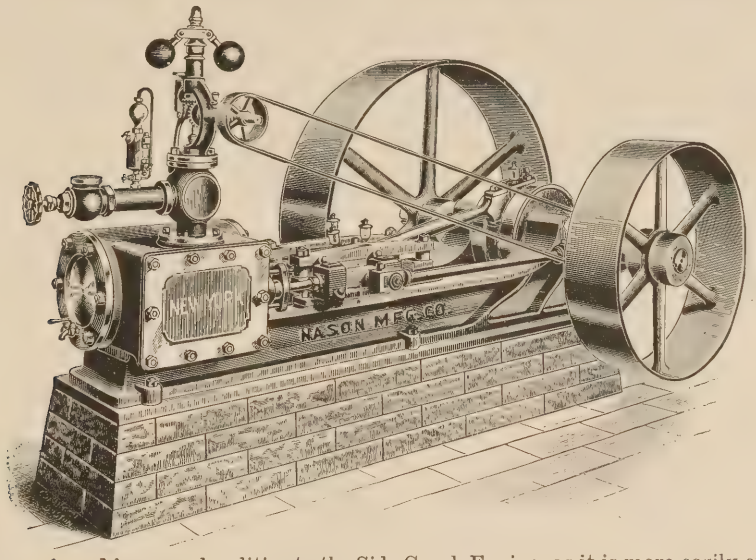
Diameter of Stack in inches	10	12	14	16	18	20	22	24	26	28	30	32	34
No. 16 Iron, per foot	1 00	1.05	1.18	1.23	1.30	1.36	1.50	1.60	1.74	1.90	2.00	2.20	2.40
No. 14 Iron, "	1.15	1.25	1.33	1.38	1.55	1.61	1.75	1.90	2.04	2.20	2.30	2.50	2.70
No. 12 Iron, "	1.40	1.50	1.58	1.68	1.85	1.96	2.20	2.35	2.24	2.75	2.85	3.05	3.30
No. 10 Iron, "	1.60	1.70	1.88	2.04	2.15	2.32	2.53	2.75	2.94	3.25	3.35	3.55	3.75
Guys, per foot	.03	.03	.03	.03	.03	.03	.04	.04	.04	.04	.04	.06	.06
Stack Plate	5.00	5.00	5 00	6.00	6.00	6.00	8.00	8.00	8.00	9.00	10.00	11.00	11.00
Damper in Stack	2.00	2.00	2.00	2.00	4.00	4.00	4.00	4.00	4.00	4.00	5.00	5.00	5.00
Umbrella Top for Stack	2.00	2.00	4.00	4.00	5.00	5.00	6.00	8.00	9.00	10.00	12.00	12.00	13 00
Spark Arrester	10.00	10.00	13.00	16.00	17.00	19.00	21.00	24.00	26.00	28.00	30.00	32.00	----

Diameter of Stack in inches	36	38	40	42	44	46	48	50	52	54	56	58	60
No. 16 Iron, per foot	2.55	----	----	----	----	----	----	----	----	----	----	----	----
No. 14 Iron, "	2.90	3 15	3.34	3.52	3.80	----	----	----	----	----	----	----	----
No. 12 Iron, "	3.50	3.80	4.04	4.27	4.50	4.87	5.12	5.32	5.56	5.76	6.96	6.16	7.00
No. 10 Iron, "	4.00	4.25	4.50	4.78	5.00	5.52	5.78	6.08	6.36	6.62	6.86	7.19	7.36
Guys, per foot	.06	.07	.07	.07	.07	.07	.07	.07	.07	.08	.08	.08	.08
Stack Plate	12.00	12.00	15.00	18.00	21.00	24.00	26.00	28.00	31.00	34.00	36.00	40.00	44.00
Damper in Stack	5.00	5.00	5.00	5.00	9.00	6.00	6.00	6.00	8.00	8.00	8.00	10.00	10.00
Umbrella Top for Stack	14.00	15.00	16.00	17.00	18.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00

*Size 16 has square flat cast iron base to set on brick ash pit.

For Elbow in Stack add cost of nine feet of Stack.

The Nason Detached Center-Crank Engine.



This Engine is preferred in many localities to the Side-Crank Engine, as it is more easily erected, requiring no extra foundation for out-end bearing. The cylinders are set low, same as our Side-Crank Engines. The cranks are solid forgings slotted out, having no welds, and the full disc "patent" crank balances perfectly balance the reciprocating parts. Connecting rods, straps and keys are wrought iron forgings. The slides and cross-heads are extra in length and width, furnishing large wearing surfaces.

The Engine complete includes pulleys, governor with belt, throttle valve, sight feed lubricator, all necessary glass oil cups and two steel wrenches.

Cylinder drainage on No. 7 and larger connected into exhaust; smaller sizes fitted with angle valves for drainage.

The valve rod stuffing box is of brass and convenient in adjustment.

Specifications of Detached (Center-Crank) Engines.

Size	5	6	7	8	9	10	11	11½	12	13	14
Horse Power (as usually rated)	20	25	30	35	40	50	60	70	80	100	125
Diameter Cylinder, inches	8	9	10	10	11	12	13	14	14	15	16
Length of Stroke, "	12	12	12	15	15	16	16	16	18	18	18
Number Revolutions	170	170	170	150	150	150	150	150	150	150	165
Diameter Pulleys, inches	30	32	32	36	36	36	36	36	36	48	48
	48	54	54	60	60	72	72	72	78	78	78
Face of Pulleys, "	8½	10½	10½	10½	10½	12½	12½	12½	12½	12½	12½
	12½	12½	12½	14½	14½	14½	16½	16½	16½	16½	16½
Diameter Shaft, "	3	3⅜	3⅞	4⅛	4⅛	4⅞	4⅞	5⅜	6½	6½	6½
Length Shaft, "	52	57	60	65	65	69	69	72	81	81	81
Length of Engine Bed, inches	84	88	90	107	107	113	113	120	132	132	132
Width of Engine Bed, "	17½	18	19	21	21	23	23	25	28	28	28
Diameter Steam Pipe, "	2	2½	2½	2½	3	3½	3½	4	4	4½	4½
Diameter Exhaust Pipe, "	2½	3	3½	3½	4	4½	4½	5	5	6	6
Price of Engine	310	380	460	490	510	660	714	780	960	980	1050
Lubricator and Oil Cups	10	10	10	12	12	12	12	14	14	14	14
Large Pulley	30	34	34	60	60	64	76	76	120	120	120
Small Pulley	14	16	16	20	20	32	32	32	32	42	42
Governor with Belt	32	36	40	40	52	64	64	76	76	94	94
Throttle	6	8	8	10	10	12	12	14	14	14	14
Engine with Fixtures, complete	402	484	568	632	664	844	910	992	1216	1264	1334
Shipping Weight, "	2550	3000	3700	4600	4800	6200	6400	7500	10500	11000	11500
Extras.											
Cross-Head Pump	16	16	16	20	20	20	20	----	----	---	----
Heater	32	32	32	36	36	40	40	----	----	----	----
Cast Iron Base	60	80	80	----	----	----	----	----	----	---	--
Link Motion and Extra Ecc. Fitted	80	80	100	100	100	100	120	120	120	120	120
Automatic Stop Motion Governor	8	8	8	8	16	16	16	17	18	18	18

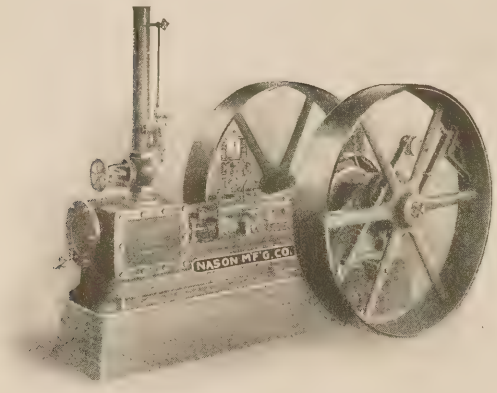
With Overhanging Cylinder, Sizes 4 to 15 H. P.

Diameter Cylinder and Length Stroke	4 x 6	5 x 6	5 x 8	6 x 9	7 x 10	8 x 10
Horse Power	4	6	8	10	12	15
Engine	120	130	184	200	216	260
With Fixtures, complete	166	180	240	264	296	346
Shipping Weight, pounds	500	600	800	1000	1450	1750

By the attachment of a reversing link, these Engines are well adapted to hoisting purposes. Each Engine carefully tested before shipment. Balanced valves in all sizes.

All our Engines are substantially built and are capable of running at a much higher speed than specified in tables.

Nason Medium Speed Automatic Cut-Off Engine.



The design of this Engine is the result of many years' experience. They are modern in every detail of construction. The cranks are made of solid forgings and the (Patented) "Disk Crank Balances" fully balance the reciprocating parts. The connecting rod, straps and eccentric rod are wrought forgings. The adjustment of both is accomplished by the wedge, as used in the most modern practice. The cylinder is set low on the bed, and has hot air jackets, thereby decreasing condensation. The steam chest ports and exhaust are arranged so as to secure perfect drainage. All material used in the construction of these Engines is of the very highest quality. The workmanship throughout is the best; all parts are built on iron jigs and are, in consequence, interchangeable. The Valve is a plain "D" style, correctly balanced, with a ring on back of same, constructed so as to remain perfectly tight and automatically taking up any wear that may occur; it is also free to lift from its seat.

These Engines are equipped with the celebrated "Lawrie" governor, thus insuring safety of operation, symmetry of construction, simplicity, durability and exceptionally close regulation.

We are prepared to furnish these Engines of the side-crank style (either right or left hand) when preferred. Change in size of balance wheel can be made when desired; governor wheel on each size must be used as listed.

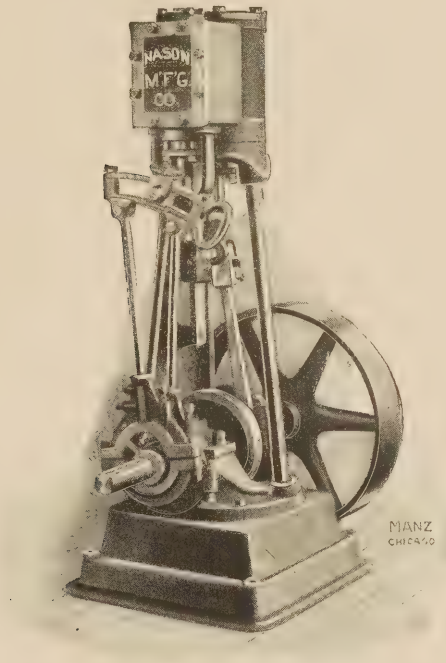
These Engines, when furnished complete, include governor wheel (with governor fitted), balance wheel, throttle valve, sight feed lubricator, gravity oiling system as shown in illustration, and cylinder drainage fitted into exhaust. With Side-Crank Engines, unless otherwise specified, we furnish the fly wheel instead of balance wheel. The governor wheel is intended to be used as a band wheel when its diameter makes it applicable. Any other fixtures wanted will be furnished and charged as extras.

Size	5	6	7	8	9
Diameter of Cylinder and Length of Stroke, in	8 x 12	9 x 12	10 x 12	10 x 15	11 x 15
Revolutions	220 250 288	220 250 288	210 235 265	190 208 234	190 208 234
H. P. 40 lbs. M. E. P	26 30 35	33 37 44	40 45 50	45 47 51	55 60 65
H. P. 50 lbs. M. E. P	32 37 44	41 46 55	50 56 62	56 59 63	69 75 81
Piston Speed	440 500 576	440 500 576	420 470 530	475 520 585	475 520 585
Size of Governor Wheel, inches	54 x 10½	54 x 10½	60 x 10½	66 x 12½	66 x 12½
Size of Balance Wheel, inches	54 x 10½	54 x 10½	60 x 10½	66 x 12½	66 x 12½
Diameter of Shaft, inches	3	3⅜	3⅞	4⅛	4⅛
Diameter of Steam Pipe, inches	2½	2½	3	3	3½
Diameter of Exhaust Pipe, inches	3	3	3½	3½	4
Diameter of Fly Wheel Side-Crank Engines, in	60	60	72	72	72
Center Crank Engine, complete	$570	694	810	870	950
Balance Wheel, deduct	46	46	60	80	80
Side-Crank Engine, complete	610	730	850	910	990
Fly Wheel, deduct	44	44	60	60	60
Galv. Iron Drip Pan, extra	12	12	12	16	16
Polishing Slides, Crosshead and Conn. Rod, ex	25	25	25	30	30
Shipping Wt. Center Crank Engine	3000	3800	4500	6000	6500
" " Side " "	3300	4000	5000	6000	6400

Size	10	11	11½	13	14
Diameter of Cylinder and Length of Stroke, in	12 x 16	13 x 16	14 x 16	15 x 18	16 x 18
Revolutions	164 177 188	164 175 188	171 183 192	156 164 171	156 164 171
H. P. 40 lbs. M. E. P	60 65 69	70 75 80	85 90 95	100 105 110	115 120 125
H. P. 50 lbs. M. E. P	75 81 86	88 94 100	106 113 119	125 131 137	144 150 156
Piston Speed	438 474 501	438 468 501	458 486 512	468 492 513	471 492 513
Size of Governor Wheel, inches	72 x 14½	72 x 14½	72 x 14½	78 x 16½	78 x 16½
Size of Balance Wheel, inches	72 x 14½	72 x 14½	72 x 14½	78 x 16½	78 x 16½
Diameter of Shaft, inches	4⅞	4⅞	5⅜	6½	6½
Diameter of Steam Pipe, inches	3½	4	4	4½	4½
Diameter of Exhaust Pipe, inches	4	4½	5	5	6
Diameter of Fly Wheel Side-Crank Engines, in	84	84	84	86	86
Center Crank Engine, complete	$1150	1220	1280	1666	1760
Balance Wheel, deduct	116	116	116	140	140
Side-Crank Engine, complete	1200	1270	1330	1720	1800
Fly Wheel, deduct	84	84	84	120	120
Galv. Iron Drip Pan, extra	16	16	22	22	22
Polishing Slides, Crosshead and Conn. Rod, ex	40	40	40	60	60
Shipping Wt. Center Crank Engine	7100	7500	8300	12000	12500
" " Side " "	7400	7700	8600	12500	13000

When ordering always specify speed and direction Engine is desired to run.

The Nason Vertical Center-Crank Engine with Reversing Link.



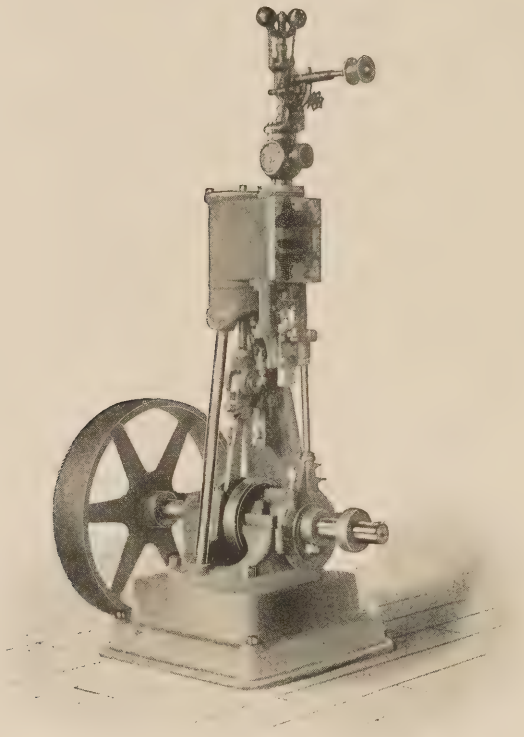
VERTICAL CENTER-CRANK ENGINE WITH REVERSING LINK.

Specifications of the Nason Vertical Center-Crank Engines with Reversing Link. Class C—Balanced Valve.

Horse Power	4	5	7	10	15	20	25	35
Size of Cylinder, inches	4 x 5	5 x 5	6 x 6	7 x 7	8 x 8	9 x 9	10 x 10	12 x 12
Usual Revolutions per Minute	250	250	200	190	180	160	160	160
Size of Steam Pipe, inches	1	1	1¼	1½	1½	2	2½	3
Size of Exhaust Pipe, "	1¼	1¼	1½	2	2	2½	3	3½
Diameter of Pulley, "	20	24	24	30	30	40	48	48
Face of " "	5	5	5	6	6	9	10	12
Diameter of Shaft, "	1¾	2	2	2½	2½	3¼	3½	4
Weight of Engine, complete, pounds	550	750	900	1400	1900	2400	3000	4400
Price of Engine, with Fittings	$166	180	198	247	270	330	392	558
" Base	6	10	12	16	19	21	24	40
" Pulley	7	11	11	15	25	30	41	51
" Engine, complete	179	201	221	278	314	381	457	649
" Coupling Fitted to Shaft	11	12	12	16	16	20	23	26

Fittings comprise Sight-Feed Lubricator, Oil Cups and Cylinder Cocks.

The Nason Vertical Center-Crank Engine.



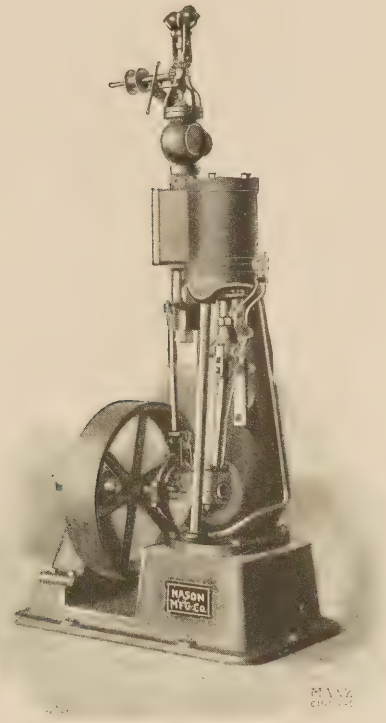
VERTICAL CENTER-CRANK ENGINE.

Specifications of the Nason Vertical Center-Crank Engines.
Class A—Balanced Valve.

Horse Power	4	5	7	10	15	20	25	35
Size of Cylinder, inches	4 x 5	5 x 5	6 x 6	7 x 7	8 x 8	9 x 9	10 x 10	12 x 12
Usual Revolutions per Minute	250	250	200	190	180	160	160	160
Size of Steam Pipe, inches	1	1	1¼	1½	1½	2	2½	3
" Exhaust " "	1¼	1¼	1½	2	2	2½	3	3½
Diameter of Pulley, "	20	24	24	30	30	40	48	48
Face of " "	5	5	5	6	6	9	10	12
Diameter of Shaft, "	1¾	2	2	2½	2½	3¼	3½	4
Length of " "	33	33	36	39	39	45	48	54
Size of Base, inches	20 x 20	21 x 21	24 x 24	30 x 30	31 x 31	32 x 32	36 x 36	40 x 40
Height to Top of Cylinder, inches	47	47	54	64	70	78	86	96
Weight of Engine complete, pounds	550	750	900	1400	1900	2400	3000	4400
Price of Engine, including Sight-Feed Lubricator, Oil Cups and Cylinder Cocks	$125	133	155	190	215	270	327	480
Price of Base	6	10	12	16	19	21	24	40
" Pulley	7	11	11	15	25	30	41	51
" Governor	17	17	20	24	24	26	35	44
" Engine complete	155	176	198	245	283	347	427	615

Shafts are of sufficient length so another pulley of same size can be added when desired.

The Nason Vertical Side-Crank Engine.



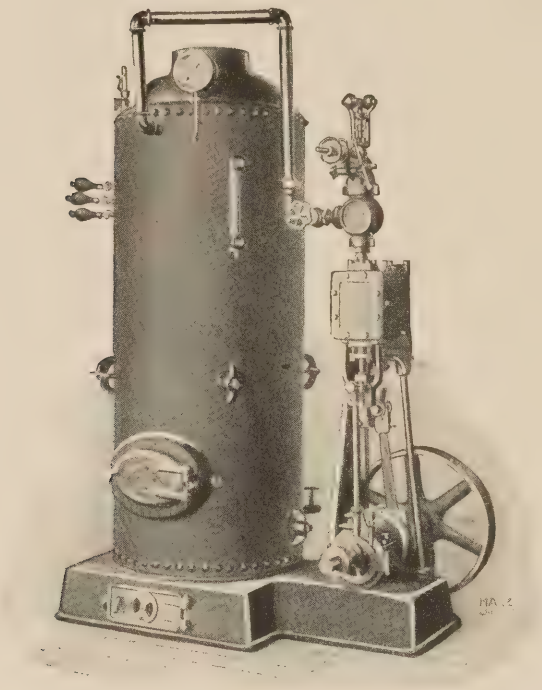
VERTICAL SIDE-CRANK ENGINE.

Specifications of the Nason Vertical Side-Crank Engines. Class B. Balanced Valve.

Horse Power	4	5	7	10	15	20	25	35
Size of Cylinder, inches	4 x 5	5 x 5	6 x 6	7 x 7	8 x 8	9 x 9	10 x 10	12 x 12
Usual Revolutions per Minute	250	250	200	190	180	160	160	160
Size of Steam Pipe, inches	1	1	1¼	1½	1½	2	2½	3
Size of Exhaust Pipe, "	1¼	1¼	1½	2	2	2½	3	3½
Diameter of Pulley, "	20	24	24	30	30	40	48	48
Face of Pulley, "	5	5	5	6	6	9	10	12
Diameter of Shaft, "	1¾	2	2	2½	2½	3¼	3½	4
Size of Base, "	20 x 34	20 x 35	22 x 40	24 x 46	28 x 50	33 x 58	36 x 60	42 x 70
Height to Top of Cylinder, inches	49	49	56	66	72	80	88	98
Weight of Engine, complete, pounds	600	800	1000	1600	2100	2600	3300	4600
Price or Engine, without Fittings	$133	152	172	216	254	314	386	560
" " complete	155	176	198	245	283	347	427	615

Fittings comprise Governor, Sight-Feed Lubricator, Oil Cups and Cylinder Cocks.

The Nason Combined Vertical Engine and Boiler.



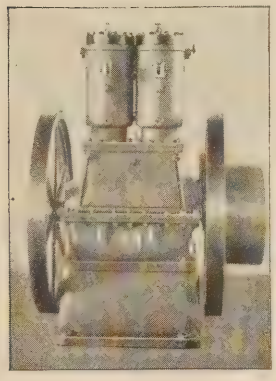
COMBINED VERTICAL ENGINE AND BOILER.

The Nason Vertical Tubular Boilers and Vertical Balanced Valve Center-Crank Engines Combined on One Base.

Horse Power of Engine	4	5	7	10	15
" " Boiler	5	6	9	12	18
Size of Cylinder, inches	4 x 5	5 x 5	6 x 6	7 x 7	8 x 8
Diameter of Boiler, "	24	24	30	30	36
Height " "	60	72	72	84	84
Number of Tubes (all 2-inch diameter)	28	28	48	48	68
Length " inches	36	48	45	57	57
Floor Space, "	30 x 45	30 x 45	34 x 50	34 x 60	38 x 74
Shipping Weight, pounds	1880	2150	2860	3560	4880
Price complete	325.00	366.00	430.00	510.00	620.00
" of Smoke Stack, 16 gauge, per foot	.80	.80	.94	.94	1.10

The fittings comprise combination base, grates, hood, steam gauge, water gauge, gauge cocks, safety valve, blow-off, check and stop valves, injector and pipe connections, governor, pully, sight-feed lubricator, oil cups and cylinder cocks.

Nash Gas and Gasoline Engines for Electric Lighting, Pumping and Power Purposes Generally.



20 ACTUAL HORSE POWER NASH GAS ENGINE, TWO-CYLINDER.

Nash Gas Engines.

The Nash Gas Engine, shown in cut, is of the vertical, two-cylinder type, with inclosed, self-oiling bearings and pistons, easily accessible through a door in crank case. These engines are notable for simplicity, great durability, low gas consumption and close regulation in speed, and for materials and workmanship of the highest order. Designed especially for electric lighting and pumping plants, the steady speed and smooth action of Nash Engines render them particularly valuable for factories and general power purposes.

The governor is of the fly-ball type and very sensitive. The ignition is by incandescent tubes. Electric igniters are furnished when desired. They are always included for gasoline engines.

For sizes from 3 to 10 horse power Nash Engines are of the single-cylinder type, from 15 to 20 horse power of two-cylinder form, and from 40 horse power upward of three-cylinder form. The same general design is preserved throughout, which with the use of two and three cylinders, secures compactness and a regularity of motion always desirable for motive power.

Nash Gasoline Engines.

Nash Gasoline Engines, in sizes of from 3 horse power to 125 horse power and upward, are the same as the regular gas engines just described, except for the addition of the Nash Gasoline Attachment, which enables them to operate with liquid stove gasoline used direct. The attachment consists essentially of a small pump, a small metal supply tank, feed valves and electric igniters; these parts are attached to the engine and there is a gasoline storage tank placed under ground and connected to the pump and supply tank. By this system, liquid stove gasoline is pumped to the supply tank and is fed directly to the engine as required, being vaporized as it passes through the feed valves, and made into gasoline gas on its way to the cylinder, where it is used and controlled the same as in the case of illuminating gas.

This method, which is simplicity itself, does not require any carbureter or gasifier, that depends on external heat to vaporize the gasoline. It may be used with any commercial grade of gasoline and it meets, moreover, all the requirements of the Board of Underwriters.

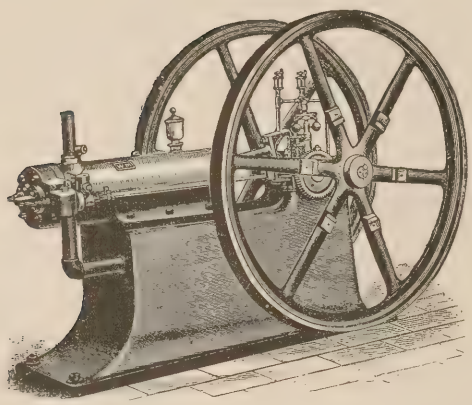
Single Cylinder Engines.

Actual Horse Power.	Revolutions per Minute.	Diameter of Fly Wheel.	Driving Pulley.	Floor Space, with Bedplate.	Height, Wheels to Clear Floor.	Shipping Weight.	Price.	Extra Price of Gasoline Tank
3	300	38 in.	18 x 6	36 x 38 in.	63 in.	2000 lbs.	466.00	38.00
5	280	39 "	18 x 6	42 x 42 "	70 "	2800 "	633.00	38.00
7	280	48 "	18 x 8	42 x 48 "	78 "	3460 "	733.00	52.00
10	280	48 "	24 x 10	42 x 48 "	79 "	3860 "	800.00	52.00

Two-Cylinder Engines.

Actual Horse Power.	Revolutions per Minute.	Diameter of Fly Wheel.	Driving Pulley.	Floor Space, with Bedplate.	Height, Wheels to Clear Floor.	Shipping Weight.	Price.	Extra Price of Gasoline Tank.
15	280	48 in.	24 x 10	48 x 54 in	78 in.	5060 lbs.	1000.00	52.00
20	280	60 "	24 x 10	60 x 57 "	85 "	5460 "	1133.00	52.00
25	270	72 "	24 x 12	72 x 70 "	96 "	8930 "	1400.00	74.00
30	250	72 "	36 x 16	72 x 71 "	96 "	9730 "	1666.00	74.00

The W. and M. Gas and Gasoline Engine.



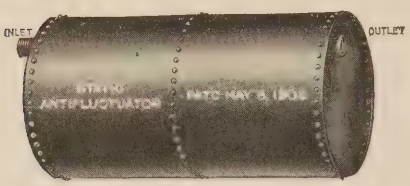
Design of Sizes from Four to Twelve Horse Power.

The W. and M. Engines are of the horizontal single cylinder type, having two balance wheels with pulley flange to interchange. They are recommended for general power purposes and are exceptionally economical in consumption of gas, being guaranteed not to consume more than 17 cubic feet of gas to the actual brake horse power per hour with good quality of gas. Particular attention is paid to the design and mechanical construction; the crank-shafts, connecting rods and other working parts being made out of the very best open-hearth forged steel and having heavy bronze metal bearings. The workmanship is all done by first-class mechanics and is beyond criticism. The iron castings are made from the very best charcoal iron which can be secured. Every engine is thoroughly tested before leaving the shops. All parts are made interchangeable, so that duplicate parts can be furnished at a moment's notice in case of accident.

Horse Power	4	5	6	7	10	11	12	14	15	17	20	23
Gas Engine	500.00		625.00		750.00		875.00		1062.00		1375.00	
Gasoline Engine		544.00		669.00		812.00		938.00		1156.00		1469.00

Electric Igniters for Engines under 10 Horse Power, 35.00 net.
" " " " over 10 " " included with Engine.

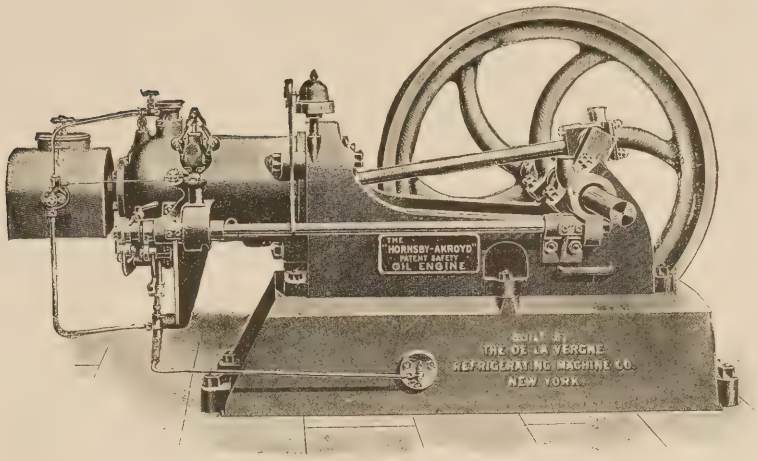
Static Antifluctuator.



A device to prevent fluctuations in gas mains, due to engine suction, without using the foul smelling and dangerous rubber gas bag. They are constructed entirely of metal and have no moving parts to be repaired at frequent intervals. They are indestructible, inexpensive, absolutely safe and of unequaled efficiency. Gas, for any purpose, taken from the same pipe supplying the engine, burns with a perfectly steady flame.

5 Horse Power and under	10.00
7 and 10 Horse Power	13.50
15 and 20 Horse Power	18.00
25 Horse Power	20.00

Kerosene Oil Engine.



THE "HORNSBY-AKROYD" PATENT SAFETY OIL ENGINE.

These Engines can be used to the greatest advantage in electric lighting, air compressing, pumping and refrigerating plants. They are also largely used for general machinery, mining, printing and farm work.

The "Hornsby-Akroyd" Oil Engine operates on what is known as the "Four Cycle."

Air is drawn into the cylinder through a positively operated air valve, and kerosene oil is simultaneously pumped into the vaporizer attached to the cylinder, which communicates with it by a narrow neck. These operations are performed during the outstroke of the piston. When the piston returns, it forces the air into the vaporizer, in which chamber it combines with the hot oil vapor, and ignition and combustion take place, resulting in an increase of pressure in the cylinder, which forces the piston outwards again.

There is no electric spark, which so frequently gives trouble in other engines. There is no ignition tube, and the automatic air valve is also entirely dispensed with.

The governor controls the supply of oil so that only the proper quantity is injected into the vaporizer to do the work required.

The cost of fuel for operation is, therefore, in almost exact ratio to the amount of power taken from the engine.

The load may be thrown on and off, or varied to any extent within the range of the power of the engine, without giving it any personal attention whatever, and there is no perceptible variation of speed.

We do not compress air in the crank chamber, but we compress it in the cylinder, and therefore get a thoroughly good and complete combustion of the fuel used, and there is no possibility of the valves and piston becoming covered with carbon and unconsumed oil, which so frequently gives trouble in other explosive engines.

The consumption of fuel is equivalent to a cost of less than one cent per actual horse power hour with kerosene, or ⅓ cent with crude oil.

Actual Horse-Power.	Rev. per Minute.	Size of Fly-Wheel.	Weight of Engine Complete.	Floor Space.
1½	400	2 ft. 1 in. x 4 in.	600	
4	260	4 ft. 0 in. x 5½ in.	2856*	3 ft. 6 in. x 7 ft. 5 in.
5	260	4 ft. 0 in. x 5½ in.	3150*	3 ft. 6 in. x 7 ft. 6 in.
7	260	4 ft. 6 in. x 6 in.	4368*	3 ft. 9 in. x 7 ft. 10 in.
10	225	4 ft. 9 in. x 7 in.	5600	4 ft. 3 in. x 9 ft. 4 in.
13	225	(2) 4 ft. 9 in. x 7 in.	6480	4 ft. 4 in. x 9 ft. 6 in.
16	225	(2) 4 ft. 9 in. x 7 in.	8000	5 ft. 2 in. x 9 ft. 10 in.
20	220	(2) 5 ft. 0 in. x 7 in.	8900	5 ft. 3 in. x 10 ft. 0 in.
25	215	(2) 6 ft. 0 in. x 7 in.	11300	5 ft. 11 in. x 10 ft. 10 in.
32	200	(2) 6 ft. 0 in. x 7 in.	16400	6 ft. 8 in. x 12 ft. 4 in.
44	180	(2) 7 ft. 0 in. x 8 in.	20700	8 ft. 6 in. x 13 ft. 5 in.
50	170	(2) 7 ft. 0 in. x 8 in.	22500	9 ft. 0 in. x 14 ft. 8 in.

Engines Without Cast Iron Bases and With One Fly-Wheel.

4	260	4 ft. 0 in. x 5½ in.	2000	7 ft. 5 in. x 3 ft. 6½ in.
5	260	4 ft. 0 in. x 5½ in.	2200	7 ft. 6 in. x 3 ft. 7 in.
7	260	4 ft. 6 in. x 6 in.	3300	7 ft. 9½ in. x 3 ft. 8½ in.

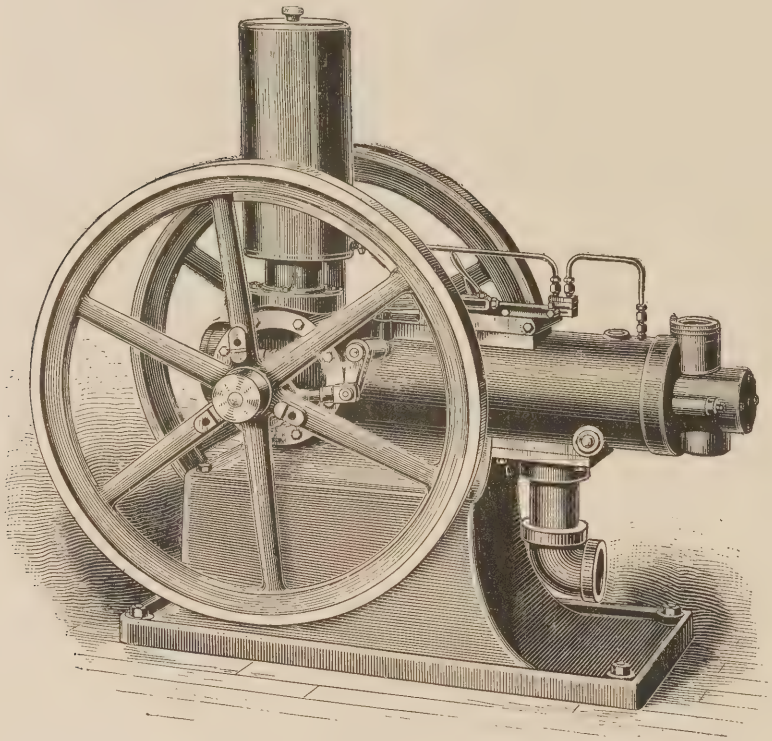
*Weight of engine with two fly-wheels and cast-iron base. These sizes are sometimes supplied without cast-iron base.

Cooling water tanks are supplied where specially ordered with water connections. Sizes and other information on application.

Water circulating pumps are fitted to the engine for small extra charge when required. Write for prices and other information.

Prices of engines complete, with or without cooling water tanks and exhaust piping, furnished on application.

Kerosene Engine.

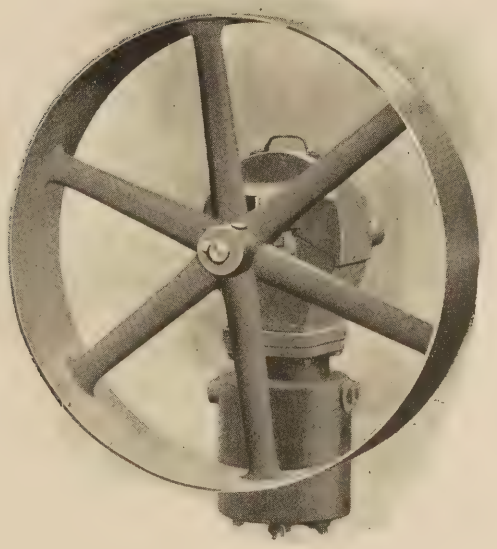


KEROSENE OIL ENGINE.

These Engines furnish a safe and reliable power for all purposes. They are extremely simple, and can be run at any time and at any place. They run with the ordinary kerosene oil, consuming about one pint per horse power per hour, the amount being regulated automatically by a governor to the actual power used, maintaining a uniform speed. (Small engines use, proportionately, somewhat more oil than the larger sizes.) They have automatic igniter, doing away with the troublesome electric spark or tube igniter. The enclosure of the crank shaft is a very important feature, making engine dust proof, extremely rigid, self-lubricating, durable and completely preventing all odor from piston. The advantages over steam or other motors are numerous: No engineer is required; no handling of coal or ashes; they can be started in a few minutes, and need no special attention; they are stronger and more durable than a steam boiler and engine, and take up less room. Mounted on a strong base, with two fly-wheels. A pulley, copper kerosene tank, wrenches, and complete directions for setting and running, go with each engine.

Actual Horse Power.	Dimensions Over All. Width. Inches.	Length. Inches.	Height. Inches.	Revolutions per Minute.	Driving Pulley. Diameter. Inches.	Face. Inches.	Approximate Weight. Pounds.	Price.
1	30	36	40	500	8	6	600	**150**
2	30	48	50	400	10	6	1100	**250**
4	38	58	54	400	12	8	1600	**400**
6	42	62	54	360	14	10	2100	**550**
8	48	70	64	360	14	10	3000	**700**
10	52	76	68	350	16	10	4000	**800**
15	60	90	72	300	18	12	5500	**1050**
20	60	90	72	300	24	14	6500	**1300**
30	72	108	74	250	36	14	11000	**1800**
Double Cylinder.								
40	80	92	72	300	48	14	12000	**2500**
60	109	108	74	250	58	16	18000	**3500**

The Nason Vertical Belt Air Compressor.



Water-Jacketed Type, suitable for Air Pressures from 25 to 250 pounds per square inch, according to size.

This is an inexpensive type of small Compressor largely used for service requiring a limited volume of compressed air. They are employed in operating small plants of pneumatic tools or oil-burners, where not more than two tools or burners are used; for charging dry-pipe systems of automatic sprinklers; testing and inflating pneumatic tires; operating small sand-blasts; spraying the finishing-solution on ribbons and other textiles; and in various minor uses of compressed air. They are also extensively employed in experimental work, enabling experimenters to test a device or process in which the use of compressed air is necessary, and avoiding the expense of installing a larger Compressor until success is assured. Many patented processes have been developed in this manner, leading eventually to the sale of larger Compressors.

These compressors are arranged to be bolted to a wall or pillow, the bolts passing through lugs cast on the frame. Their construction throughout is very strong, with heavy crank-box and bearings. The crank is of steel, and the valve-box and valves of composition metal especially suited to the purpose. The valves are similar in design to those used in our larger Compressors. The pistons are metallic, with suitable metal piston-rings especially adjusted to remain tight under pressure.

The sizes of pulleys stated in list are suitable for the air pressures named, but can be varied to meet special conditions. A full line of sizes is carried in stock, and any size can be promptly furnished singly or in dozen lots.

These Compressors are also extensively used for vacuum purposes.

The Nason Vertical Belt Air Compressors.

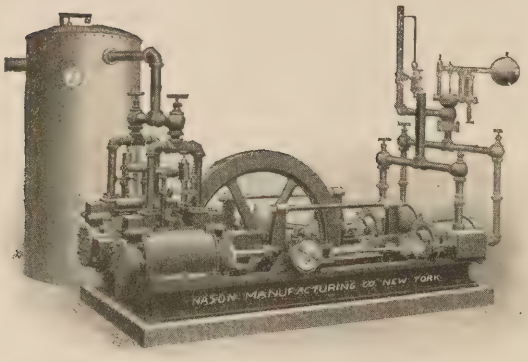
No	*2	3	4	5	6	7
Diameter Air Cylinder, inch	2¼	3	4	5	6	7
Length of Stroke, inch	6	6	6	6	6	6
Air Inlet, inch	½	¾	1	1	1¼	1¼
Air Discharge, inch	½	¾	1	1	1¼	1¼
No. Revolutions per Minute	150	150	140	140	130	130
Cubic Feet Free Air per Minute	2	3	6	10	13	17
Approximate Weight, pounds	170	190	250	300	375	400
Attainable Air Pressure, pounds sq. inch	250	200	200	200	150	100
Size Pulley Pressure to 100 pounds	18 x 3	22 x 3½	24 x 4	30 x 5	36 x 6	36 x 7
" " for Maximum Pressure	22 x 3½	24 x 4	30 x 5	36 x 5	36 x 7	36 x 7
Horse Power Required	1	1	2	3	3½	3½
Price with Single Pulley as shown	100.00	120.00	140.00	160.00	180.00	200.00

Extra Cost of Fast and Loose Pulleys.

No	2	3	4	5	6	7
For 100 pounds Pressure	12.00	14.00	16.00	28.00	30.00	32.00
For Maximum "	14.00	16.00	28.00	30.00	32.00	32.00

*This size not made with Water-Jacket.

The Nason Duplex Steam-Actuated Air Compressor.



Improved Pattern with Water-Jacketed Air Cylinders and Patent Air Governor. Suitable for air pressures up to 100 pounds per square inch.

These Compressors are built according to the latest improved regular pattern with the patent Air Governor. When desired, however, these Compressors can be equipped with our patent Speed-and-Pressure Governor.

Special quotations will be made on Compressors with compound steam or air cylinders, or both, as these Compressors must be proportioned especially to suit individual requirements.

We have patterns for many sizes, and special proportions not included in the lists. It is, therefore, advisable to furnish us with a full statement of the duty required, in order that we may submit a proposal upon a Compressor especially suited to the service it is to perform.

One side of a Duplex Compressor can be readily disconnected and run as a single machine while the other side is being repaired.

We carry a large stock of finished Compressors, and in addition keep a full line of parts on hand ready for prompt construction.

These Compressors can be safely operated at an increase of twenty-five per cent. over the number of revolutions stated. We rate their capacities at moderate speeds purposely, believing that it is always more economical to have Air Compressors, like boilers and engines, of ample capacity for the requirements.

Plan of foundation is furnished with each machine.

Each Compressor is thoroughly tested before shipment in excess of the working pressure required, and is warranted to perform the duty for which it is sold.

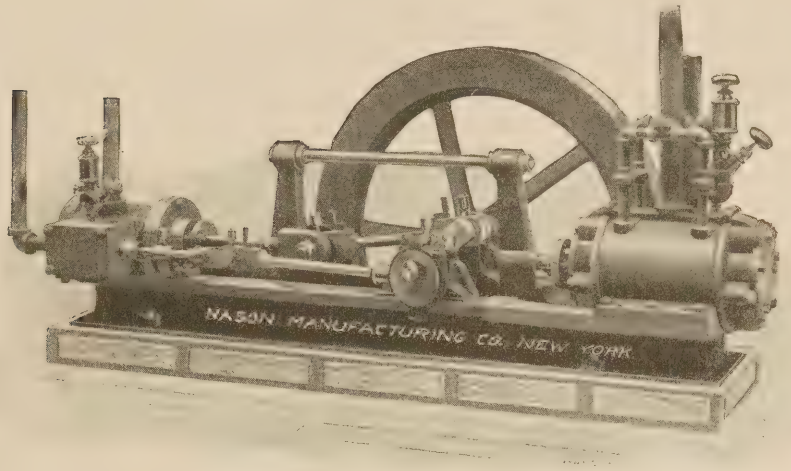
Prices include all mountings, lubricators and wrenches complete, necessary boxing, and delivery free on board dock in New York.

No	4	5	6	7	8	9	10	11
Diameter of Steam Cylinders, inches	4	5	6	7	8	9	9	10
Diameter of Air Cylinders, inches	4	5	6	7	8	9	10	10
Length of Stroke, inches	5	6	7	7	7	9	9	9
Steam Supply, inches	1	1¼	1¼	1½	1½	2	2	2
Steam Exhaust, inches	1¼	1½	1½	2	2	2½	2½	2½
Air Inlet, inches	1½	1½	2	2	2½	2½	3	3
Air Discharge, inches	1½	1½	2	2	2½	2½	3	3
Number of Revolutions per Minute	130	130	130	130	130	130	130	130
Cubic Feet of Free Air per Minute	18	35	60	80	105	172	212	212
Approximate Weight, pounds	2000	2500	3000	3500	4000	5000	6000	7000
Horse Power Required at 60 pounds Air Pressure	3	5	9	12	16	26	30	30
" " 100 " " "	4	7	12	16	20	34	40	40
Price	$450	535	580	675	790	1090	1200	1320

Air Receivers.

Size, inches	30 x 72	36 x 72	36 x 96	42 x 96	42 x 120	48 x 144	54 x 144
Price, Receiver only	70.00	84.00	98.00	115.00	129.00	185.00	207.00

Nason Single Steam-Actuated Air Compressor.



SINGLE AIR COMPRESSOR.

Improved pattern, with Double-Acting Air Cylinder surrounded by patent water-jacket. Suitable for air pressures up to 100 pounds per square inch.

This Compressor is suitable for the same duty as the Duplex Compressors, and is sometimes preferred on account of its lower first cost for an equivalent capacity.

We have patterns for many sizes not included in lists. It is, therefore, advisable to furnish us with a full statement of the duty required, in order that we may submit a proposal upon a Compressor especially suited to the service it is to perform.

We carry a large stock of finished Compressors, and in addition keep a full line of parts on hand ready for prompt construction.

These Compressors can be safely operated at an increase of twenty-five per cent. over the number of revolutions stated. We rate their capacities at moderate speeds purposely, believing that it is always more economical to have Air Compressors, like boilers or engines, of ample capacity for the requirements.

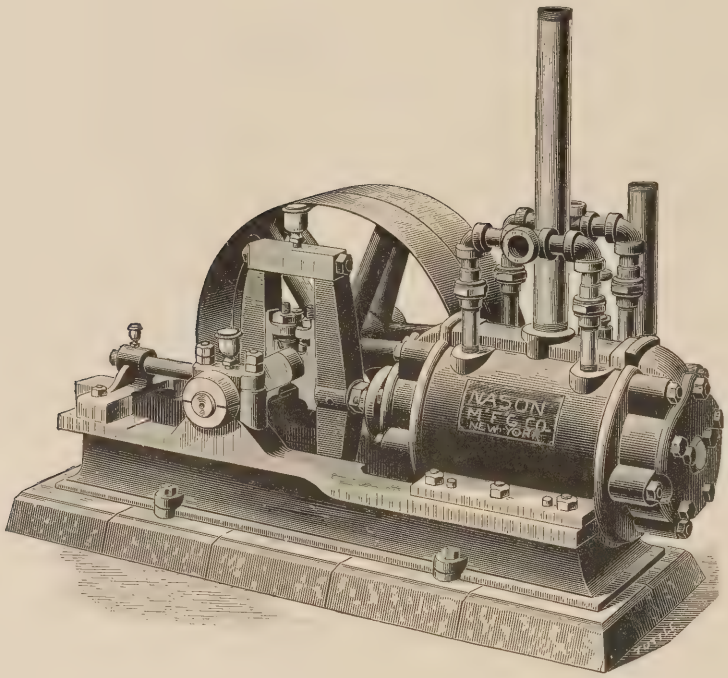
Plan of foundation is furnished with each machine.

Each Compressor is thoroughly tested before shipment in excess of the working pressure required, and is warranted to perform the duty for which it is sold.

Prices include all mountings, lubricators and wrenches complete, necessary boxing, and delivery free on board dock in New York.

No	4	5	6	7	8	9	10	11
Diameter of Steam Cylinder, inches	4	5	6	7	8	9	9	10
Diameter of Air Cylinder, inches	4	5	6	7	8	9	10	10
Length of Stroke, inches	5	6	7	7	7	9	9	9
Steam Supply, inches	¾	1	1	1¼	1¼	1½	1½	2
Steam Exhaust, inches	1	1¼	1¼	1½	1½	2	2	2½
Air Inlet, Inches	1	1¼	1½	1½	2	2½	3	3
Air Discharge, inches	1	1¼	1½	1½	2	2	2½	2½
No. of Revolutions per Minute	130	130	130	130	130	130	130	130
Cubic Feet of Free Air per Minute	9	18	30	40	53	86	106	106
Approximate Weight in Pounds	1000	1250	1500	1750	2000	2500	3000	3800
Horse Power Required at 60 Pounds Air Pressure	1½	2½	4½	6	8	13	16	16
" " " 100 " " "	2	3½	6	8	10	17	21	21
Price, without Air Governor	$200	275	300	350	425	545	600	700
" with " "	225	305	330	385	460	585	640	745

The Nason Belt Vacuum Pump.



Sliding Journal Box Pattern with Double-Acting Water-Jacketed Vacuum Cylinder.

These Pumps are the production of years of experience in the manufacture of hydraulic and pneumatic machinery.

They are built with the patent sliding journal boxes, patent water-jacket around cylinder, new style discharge valves, composition metal piston rings and fast and loose pulleys. The cylinders are bushed with hard composition metal.

These Pumps are largely used by the sugar, salt and soap manufacturers, etc., and are suitable for dry vacuum up to 29 inches.

The Nason Belt Vacuum Pump.

No	5	6	7	8	9	10
Diameter of Vacuum Cylinder, inches	5	6	7	8	9	10
Length of Stroke, inches	5	7	7	7	9	9
Air Inlet, inches	1¼	1¼	1¼	2	2	2½
Air Discharge, inches	1¼	1¼	1½	2	2	2½
Number of Revolutions per Minute	130	130	120	120	120	120
Approximate Weight in Pounds	350	450	550	750	850	950
Horse Power Required	1½	2	3	4	6	8
Price	180	240	300	350	420	480

The Nason Steam and Hot Water Heaters.

The "Equator" Steam Heater.

Patented October 28, 1890.



No. 3.

"EQUATOR" HEATER COMPLETE WITH TRIMMINGS.

With this edition of our catalogue, we take pleasure in presenting our improved "Equator" (steam) and "Gulf Stream" (hot water) Heaters, showing our latest design sectional shaking and dumping grate, and other minor features tending to perfect and further enhance their already well-known superior qualities.

The "Equator."

In planning this heater, the following features were considered, with a view to producing the most perfect heater for low pressure service that could be devised.

The surface is large as compared with the area of the grate.

It is as far as possible all of it exposed to the direct rays of the fire.

The fire door is large for convenience of firing.

The fire box is deep and roomy in order to give a large combustion chamber, and also serve as a liberal receiver to contain coal over night.

The grate is of the shaking pattern, and arranged to dump readily without opening the fire or ash pit doors.

The door for regulating air supply under the grate is separate from the ash pit door in order that it shall be always clean, and also to avoid the annoyance of a chain on the heater front, where it is likely to interfere with the ready use of both fire and ash pit doors.

A proper mud drum is provided, in which accumulations of dirt or scale will settle, from which they may be drawn at the convenience of the person in charge of the fire.

No soot or dust can collect upon the Tubes, owing to their vertical position, and the boiler is therefore self-cleaning in its action.

The Nason Steam and Hot Water Heaters.

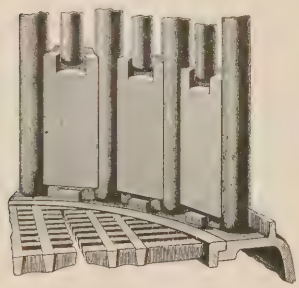
The heater must evaporate a large amount of water for each pound of coal burned in it, or for EACH DOLLAR SPENT FOR FUEL.

In construction the heater is of the drop tube type, the reservoir on top being constructed of cast iron, and the tubes of mild steel.

Into the bottom head or crown sheet—the latter being strengthened by suitable braces—are screwed a number of one-inch drop tubes, excepting on the outer row, where for the purpose of stiffening the heater for shipment 1½-inch tubes are used. The lower ends of all these tubes are closed by welding, and into each is fitted a wrought iron diaphragm—their thickness being four Nos. heavier than that used for radiators.

This insures an active circulation in all of them—water passing down on one side and up the other, conveying the steam bubbles into the reservoir above, where it separates from the body of water.

The smoke and gases after passing over the tube surface are discharged through a central tube in the steam cylinder—a baffle plate compelling them to thoroughly circulate among all the tubes before they pass into the chimney.



SECTION OF FIRE-POT.

In a heater of this type we have found it practicable to get as large a ratio of heating surface to grate surface as 40 to 1—this being much more than any other house steam heater now in the market.

Between each of the 1½-inch tubes, at their lower ends, is inserted a fire brick made expressly to fit their shape, which serve the purpose of keeping the exterior of the fire from coming directly in contact with the cooler surface of the pipes, which would hinder combustion and make the fire sluggish.

The cut shows distinctly the mode of insertion. Each tile is notched on the top sufficiently to allow it to be raised enough to pass over the small lug which holds each in place at the base. No cement or setting is required; the weight of each brick and its form hold it positively in place, and their renewal is so simple a matter that it can be done by any housekeeper without calling in the services of a steam-fitter or machinist.

At the same time the pipes keep the fire bricks partially cooled so that they are not injured to the same extent as where a furnace is entirely lined with brick.

Attention is called to the casing—the inner surface of which is made of ¼-inch asbestos board, covered by heavy galvanized or Russia iron; this being held in place by wrought iron bands clamped together at the back with bolts. In this construction, a neatness of appearance is attained which can be got in no other way; and if necessary at any time the casing can be removed and replaced in less than an hour.

The fire door is surrounded by a hollow cast iron casting, which is connected to the steam reservoir above by two 1½-inch pipes, and through these all dirt in the heater gradually settles, all sediment being driven out of the smaller tubes by their activity of circulation, and the accumulation is drawn from the bottom of the casting through a cock left there for that purpose.

In a heater of this type it is obviously impossible to empty water from the tubes by drawing off, and, foreseeing the possible danger from freezing, we made a carefully conducted series of experiments to ascertain what the probability of accident from this cause would be.

We developed the fact that when water freezes in the tubes the ice, instead of exerting its expansive force transversely, is forced up into the drum of the heater without causing any injury to the tubes whatever.

Where it is thought best for any reason to expel the water from the tubes, it can be always done by building a light fire of shavings in the heater. But this we do not recommend except when done by a competent engineer, as there may be danger of causing leakage by overheating.

In ordinary practice there is no objection whatever to leaving the water in the tubes, and we are willing to guarantee all our heaters of this type against any damage whatever occurring from this cause, providing the water is drawn from the steam drum and fire-door casing.

The main body of water in the heater is drawn from the bottom of the mud drum, which operation also empties the latter at the same time.

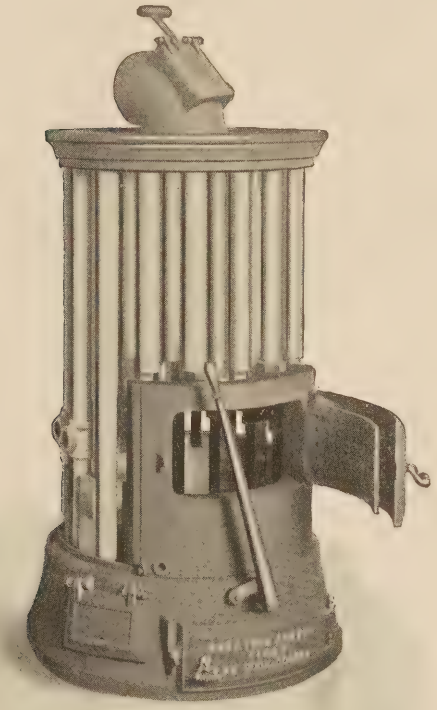
Each heater is furnished with a complete set of Water Gauges, Gauge Cocks, Safety Valve, Automatic Damper for regulating the draft, Check Draft on top, and a complete set of fire tools.

Further information and complete catalogue and treatise on steam and water warming will be furnished on application.

The Nason Steam and Hot Water Heaters.

The "Gulf Stream" Hot Water Heater.

Patented October 28, 1890.



No. 3.

"GULF STREAM" HOT WATER HEATER,

With Casing Removed, Showing Tube Surface and Form of Construction.

This heater is similar in construction to the "Equator," except that the steam dome, instead of being of large size to allow the separation of steam from the water, is cut down in height, so as to merely serve the purpose of conducting the water to the tubes and away from them after it has been heated.

The same large proportion of surface to grate is maintained, and the heater is precisely similar in all respects, except that the flow and return connections and the trimmings are different

The Nason Steam and Hot Water Heaters.

Our "Perfected" Grate.

PATENTED.

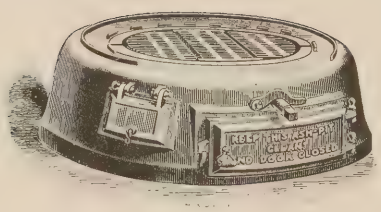


Fig. 1.
GRATE SET READY FOR USE.

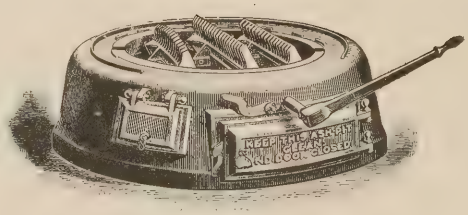


Fig. 2.
POSITION IN DUMPING.

A demand having arisen for a Grate to be used in association with our Equator and Gulf Stream Heaters which would more perfectly control the fire and its management, we have devised a form which is distinctly new in many of its features; and after a careful trial all our Heaters sent out in the future will be equipped with it.

An examination of the accompanying cuts will sufficiently show its construction and general operation. Fig. 1 is the Grate ready for use, and Fig. 2 the bars in position for dumping the fire.

It will be noticed that each bar is formed with two lateral stays running its whole length to the trunions, instead of one as is commonly used. Across the stays are ties with short pieces or fingers extending on both sides. This method of construction gives greater stability, with less weight, than with any other form, and also largely increases air-space, insuring both better combustion, and cooler bars, with their consequent longer life.

Shaking the grate is accomplished with a handle attached to the center bar spindle; motion to the left being arrested by the Grate striking the ring, and to the right by means of the pawl which catches in a notch in the spindle provided for it.

When it is desired to dump the entire contents of the fire box the pawl is thrown back to the left, leaving the spindle free to make a quarter turn to the right and place the Grate bars in a nearly vertical position.

NOTE.—Orders for Grates for these Heaters should invariably specify the date on which the Heater was purchased or the serial No. on the name plate, in order that the proper pattern may be sent.

The Nason Steam and Hot Water Heaters.

List of Sizes, with Dimensions and Prices of the "Equator" Steam Heaters.

Size No.	1	2	3	4	5
Diameter of heating casing, inches	23	25	28¼	34	40
Diameter of base, inches	29½	31½	34¾	40½	46⅝
Height from bottom of base to top of shell, inches	63½	62½	64	64	67½
Height of heater to top of smoke pipe elbow, inches	70½	71⅜	75	77	82
Diameter of fire pot, inches	16½	18½	21¾	27½	33½
Height of water line from bottom of base, inches	57	57	58½	58½	60
Number of tubes	60	85	101	151	226
Diameter of steam outlets, inches	2	2	2½	3	4
Diameter of return pipes, inches	1½	1½	1½	1½	1½
Diameter of smoke flue, inches	5	5½	8	10	12
Square feet of grate surface	1½	2	2⅔	4⅛	6⅛
Square feet of fire surface	63	81	97	144	200
Ratio of fire surface to grate surface	43 to 1	43 to 1	37 to 1	35 to 1	33 to 1
Number of square feet of direct radiating surface it will supply	275	375	550	900	1350
Weight of heater complete, lbs	1050	1200	1500	2000	2700
Price of heater complete, with trimmings	182.00	210.00	252.00	370.00	510.00

List of Sizes, with Dimensions and Prices of the "Gulf Stream" Hot Water Heaters.

Size No.	1	2	3	4	5
Diameter of heater shell, inches	23	25	28¼	34	40
Diameter of base, inches	29½	31½	34¾	40½	46⅝
Height from bottom of base to top of shell, inches	54¾	55¼	56	56⅛	56⅛
Height of heater to top of smoke pipe elbow, inches	64⅝	65⅝	70	72¼	76½
Diameter of fire pot, inches	16½	18½	21¾	27½	33½
Number of tubes	60	85	101	151	226
Number of flow pipes	2	3	3	3	2
Diameter of flow pipes, inches	2	2	{ two 2 in. { one 2½ in.	3	4
Number of return pipes	6	6	6	3	2
Diameter of return pipes, inches	1½	1½	1½	3	4
Diameter of smoke flue, inches	5	6½	8	10	12
Square feet of grate surface	1½	2	2⅔	4⅛	6⅛
Square feet of fire surface	62½	80	96	142	195¼
Ratio of fire surface to grate surface	42 to 1	43 to 1	36 to 1	35 to 1	32 to 1
Square feet of radiating surface it will supply	450	600	850	1300	1950
Weight of heater complete, lbs	950	1150	1350	1750	2350
Price of heater complete	158.00	184.00	215.00	315.00	420.00

The Nason Hot Water Tank Heaters.



TANK HEATER WITH ROUND TOP.

Size.	Height of Boiler. Inches.	Diameter of Boiler. Inches.	Size of Tapping. Inches.	Gallons will Heat.	Each.
No. 120	42	15	2	200	44.00
" 120A	47	15	2	280	53.00
" 120B	51	15	2	300	56.00
" 160	45	19	2½	325	60.00
" 160A	50	19	2½	425	74.00
" 160B	54	19	2½	450	77.00
" 200	49	23	3	500	87.00



TANK HEATER WITH FLAT TOP.

Size.	Height of Boiler. Inches.	Diameter of Boiler. Inches.	Size of Tapping. Inches.	Gallons will Heat.	Each.
No. 10	32	14	1¼	60	26.00
" 12	35	16	1¼	115	35.00
" 12A	40	16	1¼	200	42.00
" 12B	44	16	1¼	240	48.00
" 16	38½	19	1½	200	50.00
" 16A	43½	19	1½	325	60.00
" 16B	47½	19	1½	375	67.00
" 20	40	24	2	300	70.00
" 20B	49	24	2	550	91.00

These Heaters are designed for use with our steel storage tanks for hot water supply system in residences, apartment houses, etc. Also suitable for hot water heating apparatus in small dwellings.

The Nason "High Pressure" Vertical Tube Radiator.

The only Radiator made which can be safely used under modern high steam pressures.

Owing to the peculiar construction of the Bases, the bottoms of which are "tied" to the tops by numerous cored air passages, these Radiators are perfectly safe under working steam pressures up to 250 lbs.

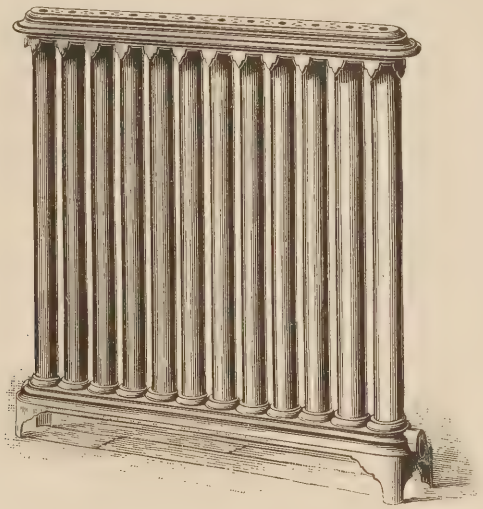
This form of construction is used in no other Radiator Base and for this reason none other should be used for high pressure service.

They are therefore peculiarly adapted to marine service, including War Vessels, Steamships, western Steamboats and Yachts.

They are also recommended for high pressure power plants where, even if Reducing Valves are used, the boiler pressure may occasionally be inadvertently applied to the heating surface in rooms or offices.

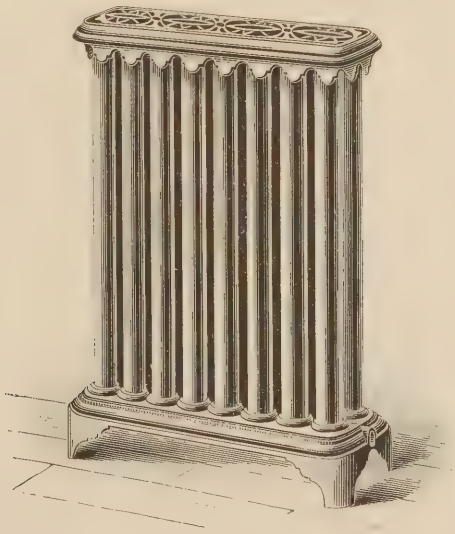
For marine service all Radiators have Lugs cast on the bottom of the feet for screwing them to the decks with lag screws.

Prices on application.



PATTERN NO. 1. SINGLE ROW OF TUBES. Outside width at floor, 5½ inches; standard height, 35 inches.

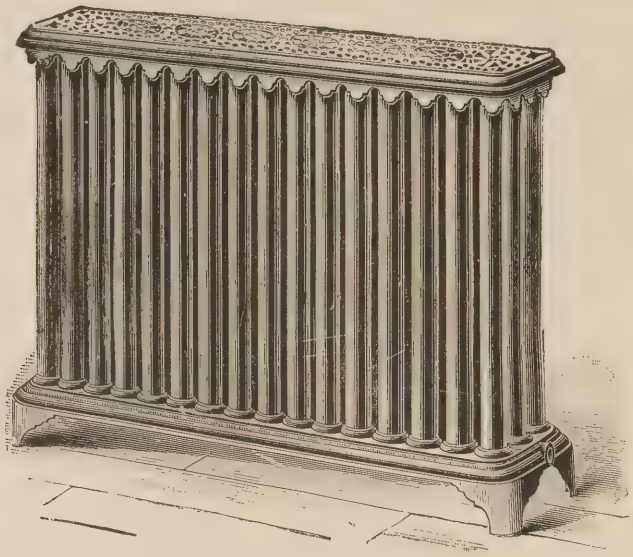
Number of Tubes in length	4	6	8	10	12	16	20	24
Total number of Tubes	4	6	8	10	12	16	20	24
Square feet of Heating Surface	4	6	8	10	12	16	20	24
Outside length of Radiator, inches	11¼	15¼	19¼	23¼	27¼	35¼	43¼	51¼



PATTERN NO. 2. TWO ROWS OF TUBES. Outside width at floor, 7½ inches; standard height, 35 inches.

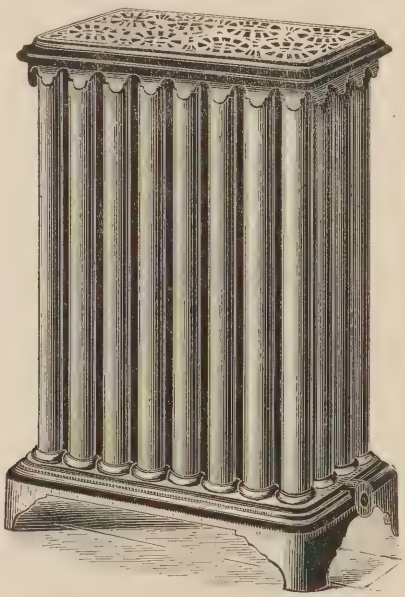
Number of Tubes in length	4	6	8	10	12	14	16	20	24	28
Total number of Tubes	8	12	16	20	24	28	32	40	48	56
Square feet of Heating Surface	8	12	16	20	24	28	32	40	48	56
Outside length of Radiator, inches	11¼	15¼	19¼	23¼	27¼	31¼	35¼	43¼	51¼	59¼

The Nason "High Pressure" Vertical Tube Radiator.



PATTERN NO. 3. THREE ROWS OF TUBES. Outside width at floor, 9½ inches; Standard Height, 35 inches.

Number of Tubes in length	4	6	8	10	12	14	16	18	20	24	28
Total number of Tubes	12	18	24	30	36	42	48	54	60	72	84
Square feet of Heating Surface	12	18	24	30	36	42	48	54	60	72	84
Outside length of Radiator, inches	11¼	15¼	19¼	23¼	27¼	31¼	35¼	39¼	43¼	51¼	59¼

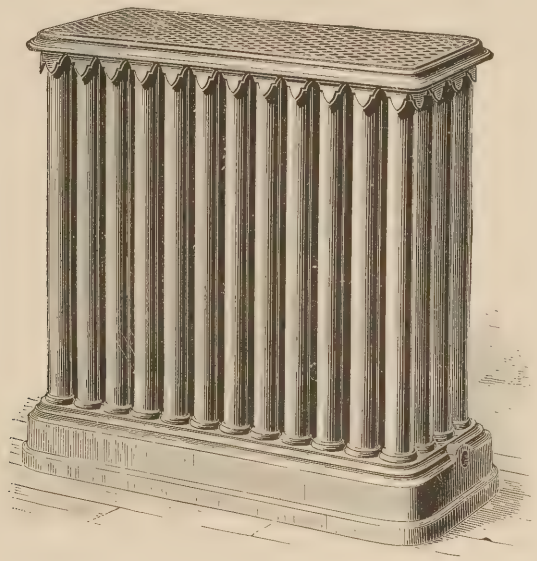


PATTERN NO. 4. FOUR ROWS OF TUBES. Outside width at floor, 11¼ inches; Standard Height, 35 inches.

Number of Tubes in length	4	8	10	12	16	20	24	28	32
Total number of Tubes	16	32	40	48	64	80	96	112	128
Square feet of Heating Surface	16	32	40	48	64	80	96	112	128
Outside length of Radiator, inches	11¼	19¼	23¼	27¼	35¼	43¼	51¼	59¼	67¼

Each Tube in the Standard 35-inch height is equivalent to a square foot of heating surface.
Binder Frames for carrying Marble Tops furnished if required.
Regular { Inlet, under 30 Tubes, ¾-inch; 30 to 60 Tubes, 1 inch; Larger, 1¼ inch.
Tapping. { Outlet, under 60 Tubes, ¾-inch; Larger, 1 inch.
Center of openings to floor: Inlets, 4 inches; Outlets, 3¾ inches.
Both openings can be furnished in same end of base when required.

The Nason Direct-Indirect or Box-Base Vertical Tube Radiator.



This illustration represents the Nason Box-Base Radiator as used in a Direct-Indirect system.

For general service this Radiator is furnished with an outlet in the back of the Base casting for admitting cold air to the Radiator through duct from outside.

The Base can also be furnished without opening, where it is desired to take air from duct through floor underneath the Radiator; or, it can be furnished with opening in back and front, so that by closing the duct opening with damper and admitting air through front opening, fitted with door, the room can be more quickly heated—the Radiator being immediately transformed into a direct or regular pattern heater.

Direct-Indirect or Box-Base Radiators.

PATTERN NO. 1 WITH SINGLE ROW OF TUBES IS NOT FURNISHED IN BOX-BASE PATTERN.

PATTERN NO. 2. TWO ROWS OF TUBES.

Number of Tubes in length	4	6	8	10	12	14	16	20	24	28
Total number of Tubes	8	12	16	20	24	28	32	40	48	56

PATTERN NO. 3. THREE ROWS OF TUBES.

Number of Tubes in length	4	6	8	10	12	14	16	18	20	24	28
Total number of Tubes	12	18	24	30	36	42	48	54	60	72	84

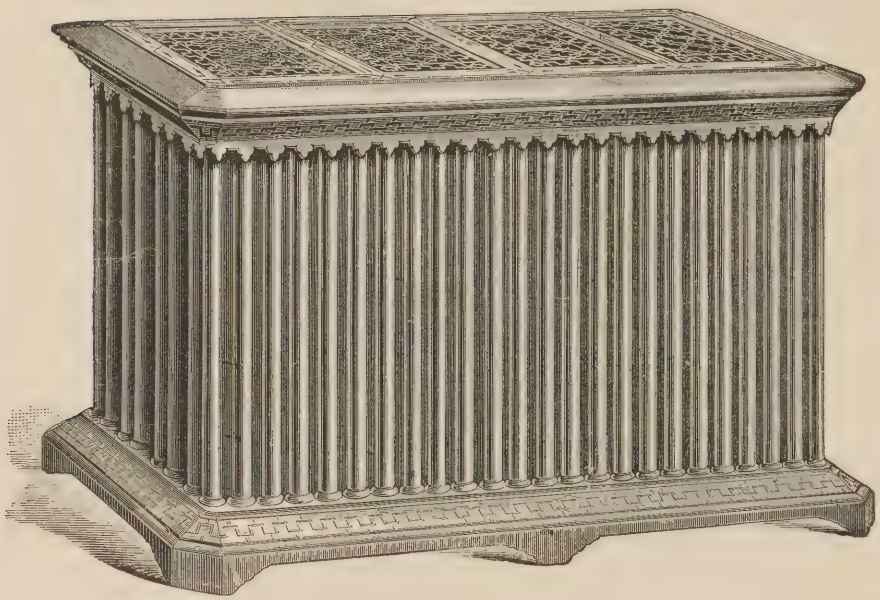
PATTERN NO. 4. FOUR ROWS OF TUBES.

Number of Tubes in length	4	8	10	12	16	20	24	28	32
Total number of Tubes	16	32	40	48	64	80	96	112	128

In ordering please state explicity whether Bases are to have doors on the front, openings on the back or both.

Each Tube in the Standard 35 inch height is equivalent to a square foot of heating surface.

The Nason "Duplex" Pattern Vertical Tube Radiator.



Size 8 x 24, 192 Tubes, equivalent to 192 square feet of heating surface.

Outside Dimensions: Length, 4 feet 5½ inches; Width, 24½ inches.

Standard Height, 3 feet.

The "Duplex" Pattern has been designed to meet a demand for a Radiator which, while having a large amount of heating surface, would occupy comparatively little floor area.

As will be observed from the cut, the rows of Tubes are arranged in groups of two, thus making a liberal provision for admitting air up through the openings in the Base, thereby rendering the inside rows nearly, if not quite as efficient as the exterior surface.

Made only in one size, as above.

The Nason Circular and Column Pattern Vertical Tube Radiators.



CIRCULAR RADIATOR.

Circular Pattern.

Standard Height, 3 feet.

Pattern Number.	No. of Tubes.	Square Feet of Radiating Surface.	Outside Diameter at Floor.	Inlets. Inches.	Outlets. Inches.
1	18	18	13½	¾	1¼
2	30	30	18	¾	1¼
3	54	54	23	¾	1¼
4	72	72	25¾	1	1¼
5	102	102	34	1	1¼
6	130	130	38¼	1¼	1¼
7	160	160	38¼	1¼	1¼

Suitable for high pressure steam up to 100 lbs.

Column Pattern.

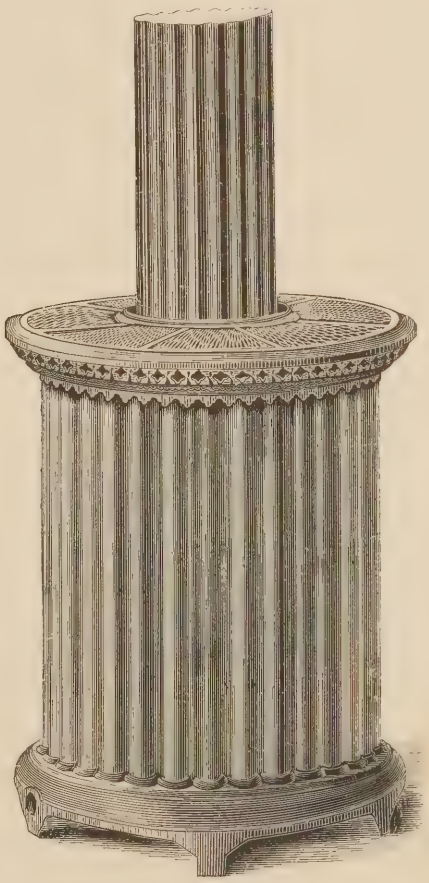
Made in halves to encircle Columns.

Standard Height, 3 feet.

Pattern Number.	No. of Tubes.	Square Feet of Radiating Surface.	Outside Diameter at Floor.	Inlets.	Outlets.	Diameter of Opening in the Base, Inches.
1	58	58	27½	¾	1¼	12
2	80	80	29¼	1	1¼	12
3	102	102	34	1	1¼	16
4	130	130	38¼	1¼	1¼	16
5	160	160	38¼	1¼	1¼	16

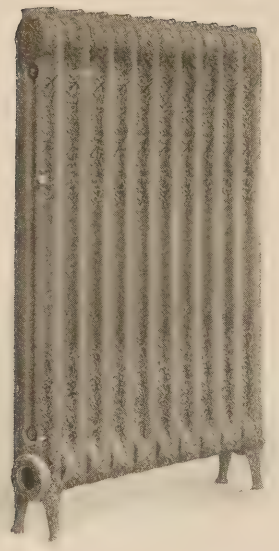
Each Tube in these Radiators in the Standard 3 ft. height is equivalent to a square foot of heating surface.

Suitable for high pressure steam up to 100 lbs.



COLUMN RADIATOR

The Nason Cast Iron Radiator.



TRITON ONE COLUMN.
Steam.

Triton One Column.

FOR STEAM OR WATER.

Height, inches	38	32	26	20
Price per square foot, Steam or Water	.42	.46	.50	.57

Triton One Column Radiators.

LIST OF SIZES.

No. of Sections.	Length.	38 Inches High.	32 Inches High.	26 Inches High.	20 Inches High.
2	5	6	5	4	3
3	7½	9	7½	6	4½
4	10	12	10	8	6
5	12½	15	12½	10	7½
6	15	18	15	12	9
7	17½	21	17½	14	10½
8	20	24	20	16	12
9	22½	27	22½	18	13½
10	25	30	25	20	15
11	27½	33	27½	22	16½
12	30	36	30	24	18
13	32½	39	32½	26	19½
14	35	42	35	28	21
15	37½	45	37½	30	22½
16	40	48	40	32	24
17	42½	51	42½	34	25½
18	45	54	45	36	27
19	47½	57	47½	38	28½
20	50	60	50	40	30
21	52½	63	52½	42	31½
22	55	66	55	44	33
23	57½	69	57½	46	34½
24	60	72	60	48	36
25	62½	75	62½	50	37½
26	65	78	65	52	39
27	67½	81	67½	54	40½
28	70	84	70	56	42
29	72½	87	72½	58	43½
30	75	90	75	60	45
31	77½	93	77½	62	46½
32	80	96	80	64	48

Each section is 4½ inches wide. Width of legs, 5⅛ inches.

All openings will have right hand threads unless ordered otherwise.

Unless otherwise specified, all Radiators will be tapped as follows :

STEAM.

	One Pipe.
Up to and including 24 feet	1 inch.
From 24 to 60 feet	1¼ "
From 60 to 100 feet	1½ "

	Double Pipe.
Up to and including 48 feet	1 x ¾ inch
From 48 to 96 feet	1¼ x 1 "
Above 96 feet	1½ x 1¼ "

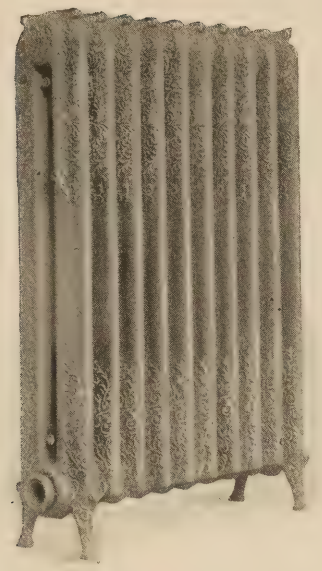
HOT WATER.

	Double Pipe.
Up to and including 40 feet	1 inch.
From 40 to 72 feet	1¼ "
Above 72 feet	1½ "

Height from floor to center of opening is 4¼ inches.

Allow ½ inch in length of Radiator for each bushing.

The Nason Cast Iron Radiator.



Triton Two-Column.

FOR STEAM OR WATER.

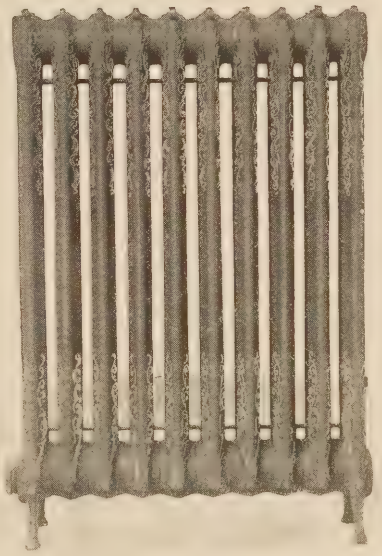
Height, inches	44	38	32	26	20
Price per square foot, Steam or Water	.41	.42	.46	.50	.57

Triton Two-Column Radiators.

TRITON TWO-COLUMN.
Steam.

LIST OF SIZES.

No of Sections.	Length in Inches.	HEATING SURFACE.—SQUARE FEET 44 Inches.	38 Inches.	32 Inches.	26 Inches.	20 Inches.
2	5	10	8	6 2/3	5 1/3	4
3	7 1/2	15	12	10	8	6
4	10	20	16	13 1/3	10 2/3	8
5	12 1/2	25	20	16 2/3	13 1/3	10
6	15	30	24	20	16	12
7	17 1/2	35	28	23 1/3	18 2/3	14
8	20	40	32	26 2/3	21 1/3	16
9	22 1/2	45	36	30	24	18
10	25	50	40	33 1/3	26 2/3	20
11	27 1/2	55	44	36 2/3	29 1/3	22
12	30	60	48	40	32	24
13	32 1/2	65	52	43 1/3	34 2/3	26
14	35	70	56	46 2/3	37 1/3	28
15	37 1/2	75	60	50	40	30
16	40	80	64	53 1/3	42 2/3	32
17	42 1/2	85	68	56 2/3	45 1/3	34
18	45	90	72	60	48	36
19	47 1/2	95	76	63 1/3	50 2/3	38
20	50	100	80	66 2/3	53 1/3	40
21	52 1/2	105	84	70	56	42
22	55	110	88	73 1/3	58 2/3	44
23	57 1/2	115	92	76 2/3	61 1/3	46
24	60	120	96	80	64	48
25	62 1/2	125	100	83 1/3	66 2/3	50
26	65	130	104	86 2/3	69 1/3	52
27	67 1/2	135	108	90	72	54
28	70	140	112	93 1/3	74 2/3	56
29	72 1/2	145	116	96 2/3	77 1/3	58
30	75	150	120	100	80	60
31	77 1/2	155	124	103 1/3	82 2/3	62
32	80	160	128	106 2/3	85 1/3	64



TRITON TWO-COLUMN.
Showing Air Space.

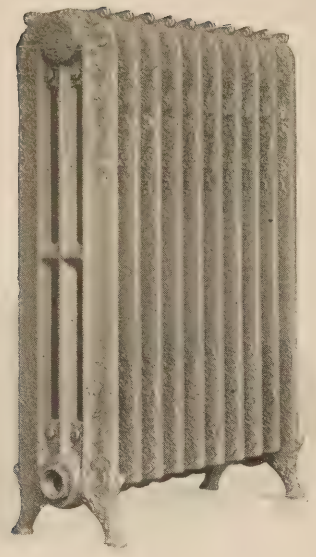
Each section is 7 1/4 inches wide. Width of legs, 8 1/4 inches.
All openings will have right hand threads unless otherwise ordered.

Unless otherwise specified, all Radiators will be tapped as follows :

	One Pipe.	Double Pipe.	Hot Water.
Up to and including 40 feet	1 inch.	3/4 x 3/4	1 x 1
From 40 to 60 feet	1 1/4 "	1 x 3/4	1 1/4 x 1 1/4
From 60 to 100 feet	1 1/2 "	1 1/4 x 1	1 1/2 x 1 1/2
100 feet and over	2 "	1 1/2 x 1	1 1/2 x 1 1/2

Height from floor to center of opening is 4 3/8 inches, for 38 inch height, all other sizes 4 1/4 inches.
Allow 1/2 inch in length of Radiator for each bushing.

The Nason Cast Iron Radiator.



Triton Three-Column.

FOR STEAM OR WATER.

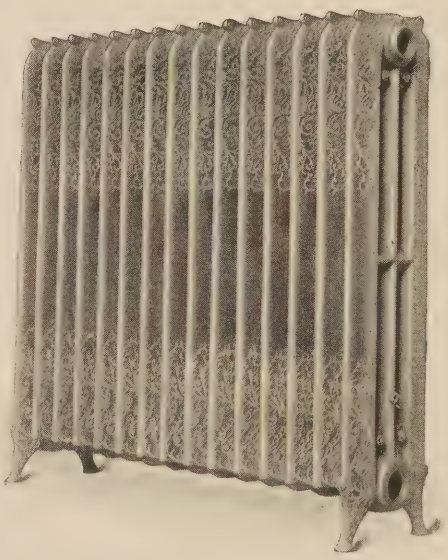
Height, Inches	44	38	32	26	23	20	18
Price per square foot, Steam or Water	.41	.42	.46	.50	.53	.57	.58

Triton Three-Column Radiators.

TRITON THREE-COLUMN. Steam.

LIST OF SIZES.

No. of Sections.	Length, Inches.	Heating Surface.—Square Feet— 44 In. High.	38 In. High.	32 In. High.	26 In. High.	23 In. High.	20 In. High.	18 In. High.
2	5	12	10	9	7½	6	5½	4½
3	7½	18	15	13½	11¼	9	8¼	6¾
4	10	24	20	18	15	12	11	9
5	12½	30	25	22½	18¾	15	13¾	11¼
6	15	36	30	27	22½	18	16½	13½
7	17½	42	35	31½	26¼	21	19¼	15¾
8	20	48	40	36	30	24	22	18
9	22½	54	45	40½	33¾	27	24¾	20¼
10	25	60	50	45	37½	30	27½	22½
11	27½	66	55	49½	41¼	33	30¼	24¾
12	30	72	60	54	45	36	33	27
13	32½	78	65	58½	48¾	39	35¾	29¼
14	35	84	70	63	52½	42	38½	31½
15	37½	90	75	67½	56¼	45	41¼	33¾
16	40	96	80	72	60	48	44	36
17	42½	102	85	76½	63¾	51	46¾	38¼
18	45	108	90	81	67½	54	49½	40½
19	47½	114	95	85½	71¼	57	52¼	42¾
20	50	120	100	90	75	60	55	45
21	52½	126	105	94½	78¾	63	57¾	47¼
22	55	132	110	99	82½	66	60½	49½
23	57½	138	115	103½	86¼	69	63¼	51¾
24	60	144	120	108	90	72	66	54
25	62½	150	125	112½	93¾	75	68¾	56¼
26	65	156	130	117	97½	78	71½	58½
27	67½	162	135	121½	101¼	81	74¼	60¾
28	70	168	140	126	105	84	77	63
29	72½	174	145	130½	108¾	87	79¾	65¼
30	75	180	150	135	112½	90	82½	67½
31	77½	186	155	139½	116¼	93	85¼	69¾
32	80	192	160	144	120	96	88	72



TRITON THREE-COLUMN. Water.

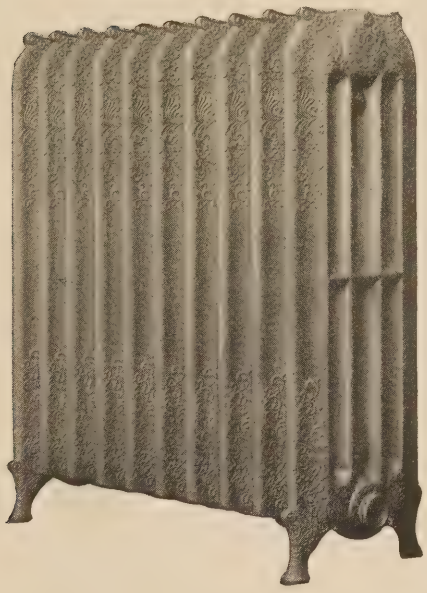
Each section is 9⅛ inches wide. Width of legs, 10⅛ inches.
All openings will have right hand threads unless otherwise ordered.

Unless otherwise specified, all Radiators will be tapped as follows:

	One Pipe.	Double Pipe.	Hot Water.
Up to and including 40 feet	1 inch.	¾ x ¾	1 x 1
From 40 to 60 feet	1¼ "	1 x ¾	1¼ x 1¼
From 60 to 100 feet	1½ "	1¼ x 1	1½ x 1½
100 feet and over	2 "	1½ x 1	1½ x 1½

Height from floor to center of opening is 4¼ inches.
Allow ½ inch in length of Radiator for each bushing.

The Nason Cast Iron Radiator.



TRITON FOUR-COLUMN.

Triton Four-Column.

FOR STEAM OR WATER.

Height, inches	44	38	32	26	23	20	18
Price per foot, Steam	--	.42	--	--	--	--	--
Price per foot, Water	.41	.42	.46	.50	.53	.57	.58

Triton Four-Column Radiators.

LIST OF SIZES.

No. Sections.	Length, Inches.	Heating Surface.—Square Feet. 44 In. High.	38 In. High.	32 In. High.	26 In. High.	23 In. High.	20 In. High.	18 In. High.
2	6	18 1/2	16	14	11 1/3	9	8	7
3	9	27 3/4	24	21	17	13 1/2	12	10 1/2
4	12	37	32	28	22 2/3	18	16	14
5	15	46 1/4	40	35	28 1/3	22 1/2	20	17 1/2
6	18	55 1/2	48	42	34	27	24	21
7	21	64 3/4	56	49	39 2/3	31 1/2	28	24 1/2
8	24	74	64	56	45 1/3	36	32	28
9	27	83 1/4	72	63	51	40 1/2	36	31 1/2
10	30	92 1/2	80	70	56 2/3	45	40	35
11	33	101 3/4	88	77	62 1/3	49 1/2	44	38 1/2
12	36	111	96	84	68	54	48	42
13	39	120 1/4	104	91	73 2/3	58 1/2	52	45 1/2
14	42	129 1/2	112	98	79 1/3	63	56	49
15	45	138 3/4	120	105	85	67 1/2	60	52 1/2
16	48	148	128	112	90 2/3	72	64	56
17	51	157 1/4	136	119	96 1/3	76 1/2	68	59 1/2
18	54	166 1/2	144	126	102	81	72	63
19	57	175 3/4	152	133	107 2/3	85 1/2	76	66 1/2
20	60	185	160	140	113 1/3	90	80	70
21	63	194 1/4	168	147	119	94 1/2	84	73 1/2
22	66	203 1/2	176	154	124 2/3	99	88	77
23	69	212 3/4	184	161	130 1/3	103 1/2	92	80 1/2
24	72	222	192	168	136	108	96	84
25	75	231 1/4	200	175	141 2/3	112 1/2	100	87 1/2
26	78	240 1/2	208	182	147 1/3	117	104	91
27	81	249 3/4	216	189	153	121 1/2	108	94 1/2
28	84	259	224	196	158 2/3	126	112	98
29	87	268 1/4	232	203	164 1/3	130 1/2	116	101 1/2
30	90	277 1/2	240	210	170	135	120	105
31	93	286 3/4	248	217	175 2/3	139 1/2	124	108 1/2
32	96	296	256	224	181 1/3	144	128	112

Each section is 12 3/4 inches wide.

Width of legs, 13 3/4 inches.

All openings will have right hand threads unless ordered otherwise.

Unless otherwise specified, all Radiators will be tapped as follows :

	One Pipe.	Double Pipe.	Hot Water.
Up to and including 40 feet	1 inch.	3/4 x 3/4	1 x 1
From 40 to 60 feet	1 1/4 "	1 x 3/4	1 1/4 x 1 1/4
From 60 to 100 feet	1 1/2 "	1 1/4 x 1	1 1/2 x 1 1/2
100 feet and over	2 "	1 1/2 x 1	1 1/2 x 1 1/2

Height from floor to center of opening is 4 1/4 inches.

Allow 1/2 inch in length of Radiator for each bushing.

The Nason Cast Iron Radiator.



Chautauqua Plain.

FOR STEAM OR WATER.

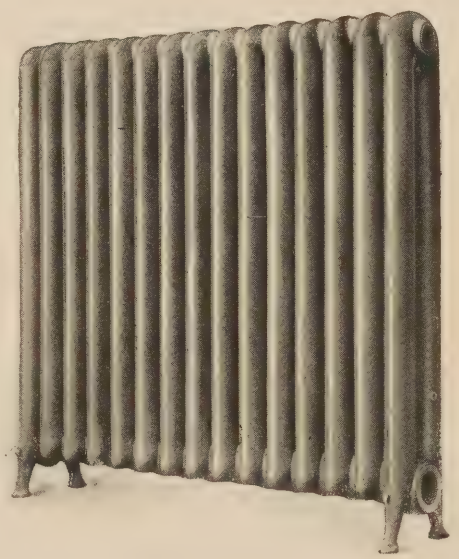
Height, inches	45	38	32	26	20
Price per square foot, Steam or Water	.41	.42	.46	.50	.57

Chautauqua Radiators.

CHAUTAUQUA PLAIN.
Steam.

LIST OF SIZES.

No. of Sections.	Length in Inches.	Heating Surface.—Square Feet. 45 Inches.	38 Inches.	32 Inches.	26 Inches.	20 Inches.
2	5	10	8	6 2/3	5 1/3	4
3	7 1/2	15	12	10	8	6
4	10	20	16	13 1/3	10 2/3	8
5	12 1/2	25	20	16 2/3	13 1/3	10
6	15	30	24	20	16	12
7	17 1/2	35	28	23 1/3	18 2/3	14
8	20	40	32	26 2/3	21 1/3	16
9	22 1/2	45	36	30	24	18
10	25	50	40	33 1/3	26 2/3	20
11	27 1/2	55	44	36 2/3	29 1/3	22
12	30	60	48	40	32	24
13	32 1/2	65	52	43 1/3	34 2/3	26
14	35	70	56	46 2/3	37 1/3	28
15	37 1/2	75	60	50	40	30
16	40	80	64	53 1/3	42 2/3	32
17	42 1/2	85	68	56 2/3	45 1/3	34
18	45	90	72	60	48	36
19	47 1/2	95	76	63 1/3	50 2/3	38
20	50	100	80	66 2/3	53 1/3	40
21	52 1/2	105	84	70	56	42
22	55	110	88	73 1/3	58 2/3	44
23	57 1/2	115	92	76 2/3	61 1/3	46
24	60	120	96	80	64	48
25	62 1/2	125	100	83 1/3	66 2/3	50
26	65	130	104	86 2/3	69 1/3	52
27	67 1/2	135	108	90	72	54
28	70	140	112	93 1/3	74 2/3	56
29	72 1/2	145	116	96 2/3	77 1/3	58
30	75	150	120	100	80	60
31	77 1/2	155	124	103 1/3	82 2/3	62
32	80	160	128	106 2/3	85 1/3	64



CHAUTAUQUA PLAIN.
Water.

Each section is 7 1/4 inches wide. Width of legs, 8 1/4 inches.
All openings will have right hand threads unless otherwise ordered.

Unless otherwise specified, all Radiators will be tapped as follows :

	One Pipe.	Double Pipe.	Hot Water.
Up to and including 40 feet	1 inch.	3/4 x 3/4	1 x 1
From 40 to 60 feet	1 1/4 "	1 x 3/4	1 1/4 x 1 1/4
From 60 to 100 feet	1 1/2 "	1 1/4 x 1	1 1/2 x 1 1/2
100 feet and over	2 "	1 1/2 x 1	1 1/2 x 1 1/2

Height from floor to center of opening is 4 1/8 inches.
Allow 1/2 inch in length of Radiator for each bushing.

The Nason Cast Iron Radiator.



CHAUTAUQUA ORNAMENTAL.
Steam.

Chautauqua Ornamental.

FOR STEAM OR WATER.

Height, inches	45	38	32	26	20
Price per square foot, Steam or Water	.41	.42	.46	.50	.57

Chautauqua Radiators.

LIST OF SIZES.

No. of Sections.	Length in Inches.	Heating Surface.—Square Feet— 45 Inches.	38 Inches.	32 Inches.	26 Inches.	20 Inches.
2	5	10	8	6 2/3	5 1/3	4
3	7 1/2	15	12	10	8	6
4	10	20	16	13 1/3	10 2/3	8
5	12 1/2	25	20	16 2/3	13 1/3	10
6	15	30	24	20	16	12
7	17 1/2	35	28	23 1/3	18 2/3	14
8	20	40	32	26 2/3	21 1/3	16
9	22 1/2	45	36	30	24	18
10	25	50	40	33 1/3	26 2/3	20
11	27 1/2	55	44	36 2/3	29 1/3	22
12	30	60	48	40	32	24
13	32 1/2	65	52	43 1/3	34 2/3	26
14	35	70	56	46 2/3	37 1/3	28
15	37 1/2	75	60	50	40	30
16	40	80	64	53 1/3	42 2/3	32
17	42 1/2	85	68	56 2/3	45 1/3	34
18	45	90	72	60	48	36
19	47 1/2	95	76	63 1/3	50 2/3	38
20	50	100	80	66 2/3	53 1/3	40
21	52 1/2	105	84	70	56	42
22	55	110	88	73 1/3	58 2/3	44
23	57 1/2	115	92	76 2/3	61 1/3	46
24	60	120	96	80	64	48
25	62 1/2	125	100	83 1/3	66 2/3	50
26	65	130	104	86 2/3	69 1/3	52
27	67 1/2	135	108	90	72	54
28	70	140	112	93 1/3	74 2/3	56
29	72 1/2	145	116	96 2/3	77 1/3	58
30	75	150	120	100	80	60
31	77 1/2	155	124	103 1/3	82 2/3	62
32	80	160	128	106 2/3	85 1/3	64

Each section is 7 1/4 inches wide.

Width of legs, 8 1/4 inches.

All openings will have right hand threads unless otherwise ordered.

Unless otherwise specified, all Radiators will be tapped as follows :

	One Pipe.	Double Pipe.	Hot Water.
Up to and including 40 feet	1 inch.	3/4 x 3/4	1 x 1
From 40 to 60 feet	1 1/4 "	1 x 3/4	1 1/4 x 1 1/4
From 60 to 100 feet	1 1/2 "	1 1/4 x 1	1 1/2 x 1 1/2
100 feet and over	2 "	1 1/2 x 1	1 1/2 x 1 1/2

Height from floor to center of opening is 4 1/8 inches.

Allow 1/2 inch in length of Radiator for each bushing.

The Nason Cast Iron Radiators.



TRITON WALL RADIATOR.
Steam.

Triton Wall Radiator.

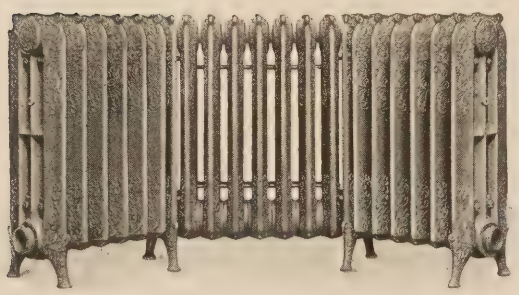
FOR STEAM OR WATER.

This illustration represents our Single Column "Triton" assembled without legs, which we recommend for use as a Wall Radiator. Width of section, 4½ inches.

Height, inches	38	32	26	20
Price per square foot, Steam or Water	.42	.46	.50	.57

For sizes, etc., see Triton Single Column.

Bay Window, Corner and Stairway Radiators.



TRITON THREE-COLUMN BAY WINDOW RADIATOR.
Steam.

Special Radiators.

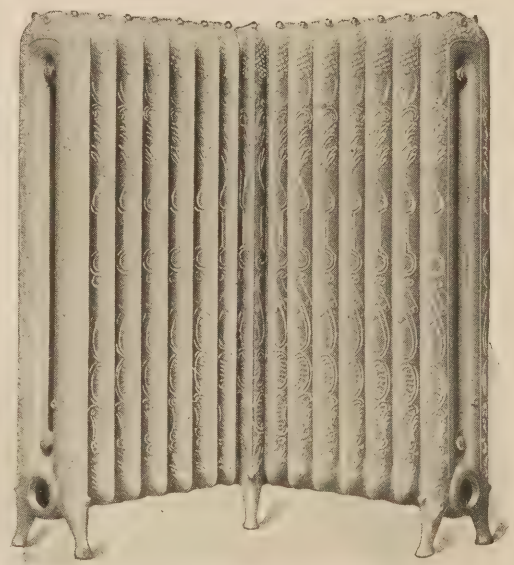
Curved, Corner and Angle Radiators can be furnished in any style.

In ordering such Radiators specify the exact radius or angle of the baseboard at floor within which the Radiator is to be placed.

Also furnish sketch showing which end of Radiator is for supply and which for return, as you face the inside of angle or curve.

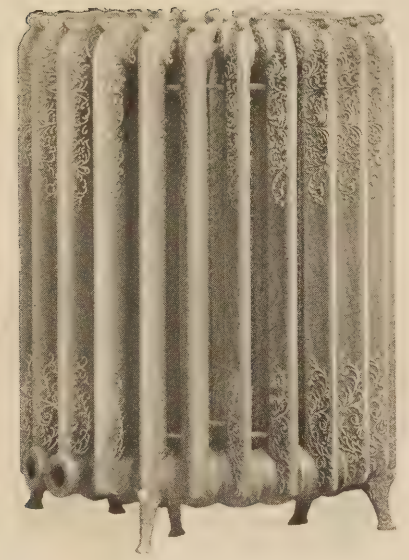
Stairway Radiators can also be furnished in the Two, Three or Four Column Triton Pattern.

Prices on application.



CHAUTAUQUA TWO-COLUMN CORNER RADIATOR.
Steam.

The Nason Cast Iron Radiators.



TRITON TWO-COLUMN CIRCLE RADIATOR.
Steam.

Triton Two-Column Circle Radiator.

Circular Radiators can be furnished in Triton One-Column, Two or Three-Column or Chautauqua Two-Column, Steam or Water.

Prices and Dimensions furnished on application.

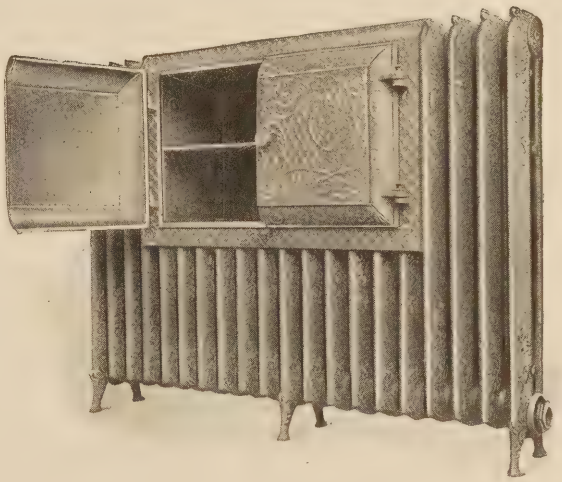
Dining Room Radiator.

Made in Chautauqua and Triton Two-Column Ornamental Radiators only. The smallest complete stack contains 32 feet of Radiating Surface and is composed of twelve 20-inch sections underneath oven and one 4-foot section at each end. Oven furnished with one shelf

DIMENSIONS.

Length of Oven, 30 inches.
Depth of Oven, 12½ inches.
Height of Oven, 17½ inches.
Projection from rear face of Radiator, 5½ inches.

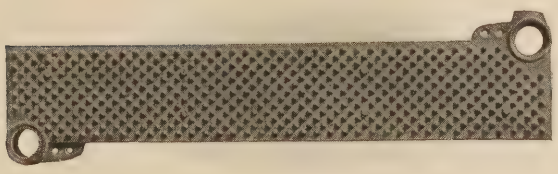
List price for Oven, exclusive of Radiator sections 35.00



DINING ROOM RADIATOR.
Steam.

Perfect Pin Indirect Radiator.

STEAM OR WATER.



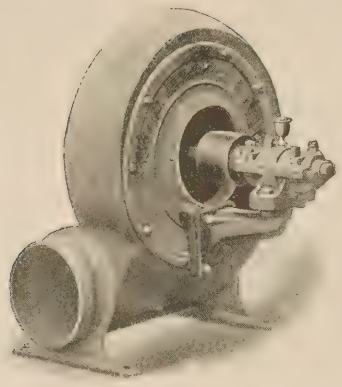
Made in sections of 12 feet each, assembled with Slip Nipples.

Each section occupies 2¾ inches in length of stack.

Stacks of 48 feet and under, tapped 1¼ inch; over 48 feet, 1½ inch.

Perfect Pin, Steam or Water, 12 square feet, per section 3.24

An additional charge of 1 cent per foot will be made for assembling Indirect Radiation.



RIGHT HAND BOTTOM HORIZONTAL DISCHARGE.

The Nason Volume Blower for Boilers, Heating Furnaces, Forges, Etc.

This type is especially adapted for work requiring large volumes of air at moderate pressures. For blowing forge fires, puddling furnaces, heating furnaces and supplying draft to steam boilers they are universally employed.

Especial attention is called to the patented oil ring type journal bearings used in these Blowers, which insure a cool bearing at all times. Up blast or special discharge Blowers cost 10% in advance of regular. No special discharge Blowers exchanged.

These Blowers are guaranteed to be built of the best material and workmanship, in a thoroughly workmanlike manner, to run with minimum power, to be more durable, to be so proportioned as to give the greatest amount of blast and air obtainable in a given size, and to be sold at lower prices for the same size and capacity than those of any other manufacture.

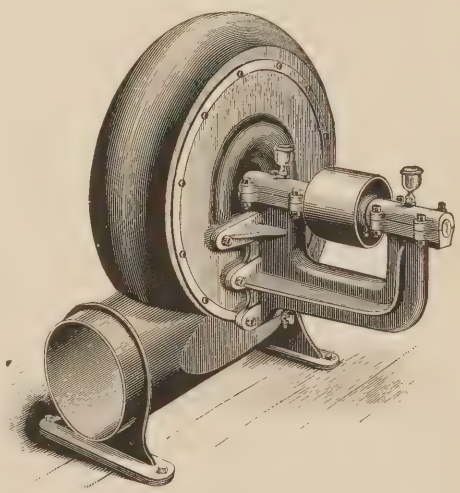
No of Blower.	Height in Inches.	Outside Diameter of Outlet.	Pulleys Diameter.	Pulleys Face.	Weight.	Price.
000 B	14½	4½	2¾	2¼	44	$15
1 B	15¾	5	3	2½	66	20
2 B	20¼	6	3¼	2⅝	75	25
3 B	25	7½	4	3¼	165	33
4 B	29	9	5	4	210	44
5 B	32	10½	5¾	4½	275	55
6 B	37½	12	6½	5½	357	70
7 B	43	14	7½	6½	515	90
8 B	48	16½	8½	7½	640	150
9 B	55	18	9½	8½	1035	200
10 B	68	21	12	10	1500	250
11 B	79	24	14	12	2500	350

The Nason Volume Exhauster with Overhung Wheel.

These Exhausters are especially adapted for removing the refuse from emery wheels, buffing wheels, etc. It is usually necessary to run the Exhausters to a speed sufficient to produce 4 or 5 oz. pressure for average work.

In ordering it is always advisable to mention the service for which it is required, so that special wheels can be provided if necessary. Exhausters made with the "up blast" cost 10% more than the horizontal discharge.

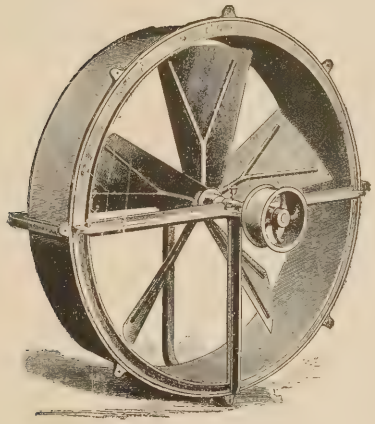
These Exhausters are guaranteed to be built of the best material and workmanship, in a thoroughly workmanlike manner, to run with minimum power, to be more durable, to be so proportioned as to give the greatest suction and expulsive force, and to be sold at lower prices for the same size and capacity than those of any other manufacture.



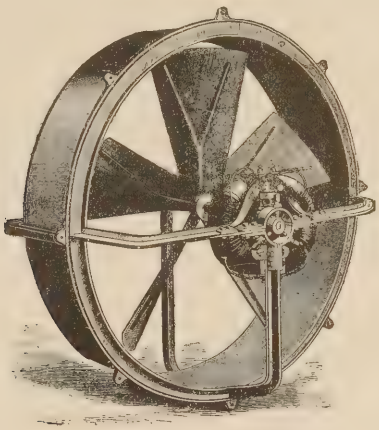
RIGHT HAND BOTTOM HORIZONTAL DISCHARGE.

No. of Exhauster.	Height in Inches.	Diameter of Outlet.	Diameter of Inlet.	Diameter of Pulley.	Face of Pulley.	Weight.	Price.
000 B	14½	4½	4½	2¾	2¼	60	$15
1 B	15¾	5	5	3	2½	75	20
2 B	20¼	6	6	3¼	2⅝	90	25
3 B	25	7½	7½	4	3¼	170	33
4 B	29	9	9	5	4	232	44
5 B	32	10½	10½	5¾	4½	280	55
6 B	37½	12	12	6½	5½	390	70
7 B	43	14	14	7½	6½	560	90
8 B	48	16½	16	8½	7½	740	150
9 B	55	18	18	9½	8½	1350	200
10 B	68	21	21	12	10	1850	250

The Nason Disk Wheels for Cooling, Ventilating and Drying.



WITH OVERHUNG PULLEY.



WITH DIRECT ATTACHED MOTOR.

After many years of experiments and tests with various shapes of blades for Disk Wheel construction, it has been demonstrated that this design will deliver more air with the same amount of power applied than any other. By an ingenious system of balancing used only in this type of Disk Wheels, we are enabled to secure smooth running even when driven at a high speed. These Wheels are very stiffly braced in every part, the strength of vane and blade being sufficient for the hardest kind of service. We guarantee these Wheels to be capable of moving a larger volume of air in proportion to the power expended than any other Wheel of same diameter on the market, and to be noiseless in operation. Each Wheel is fitted with a self-oiling device and is sent with flanged pulleys unless otherwise ordered.

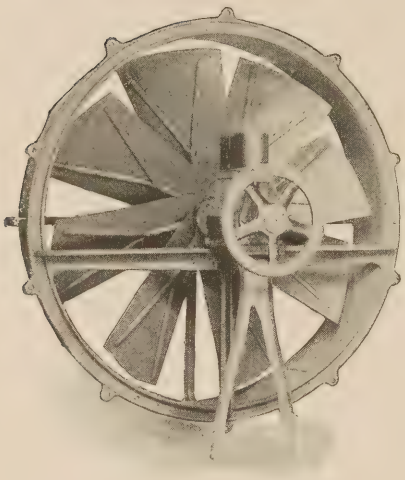
The Nason Disk Wheels.

Overhung Pulley.								Direct Attached Motor.			
Dia. Wheel. Inches.	Dia. Frames. Inches.	Width Frames. Inches.	Length Shaft. Inches.	Dia. Pulley. Inches.	Face Pulley. Inches.	Weight, lbs., with Pulley.	Price with Pulley.	Dia. Wheel. Inches.	Speed. Rev. Minutes.	Motor Horse Power.	Price with Motor.
18	20	6	17	4	2	75	$40	18	1000	¼	$220
24	26	7	19	4	2	100	50	24	775	½	300
30	33	8	23	6	2¾	170	65	30	650	1	360
36	38	11	23	7	3	230	85	36	600	2	490
42	46	11	27	8	3½	325	110	42	550	4	650
48	54	13	31	9	4	445	125	48	500	5	750
54	61	16	34	9	4	560	175	54	450	7½	975
60	67	17	37	10	5	630	250	60	400	10	1200
72	81	22	45	12	5½	820	300	72	350	15	1500
84	93	27	52	14	6	990	350				

Motors are ordinarily wound for 115, 230 and 500 volts. An extra charge is made for small motors for 500 volt circuits. Always state voltage of current when ordering.

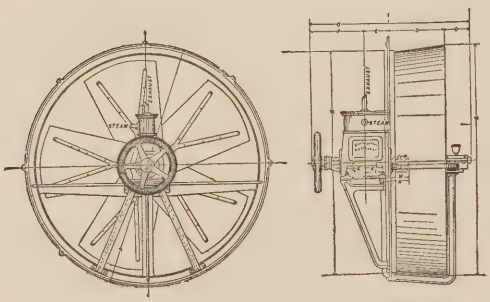
Special Wheels of greater diameter can be furnished to order, and blue prints showing number of blades and other details will be furnished upon application.

The Nason Disk Wheel with Direct Attached Engine.



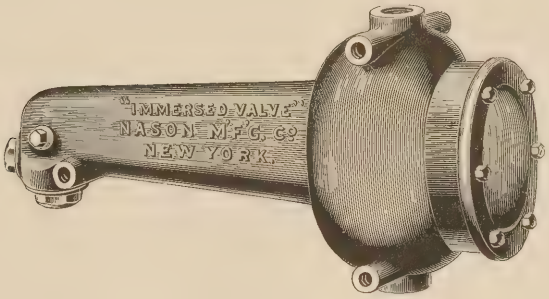
ENGINE INCLOSED, RUNNING IN OIL, DOUBLE SINGLE-ACTING TYPE.

The Engine shown directly connected to a disk wheel is of the double single-acting type, inclosed and running in oil. The same high-grade construction is maintained in these engines as when they are built for running dynamos and other refined service. No governor, however, is used when direct connected to a fan. The use of disk wheels is thus rendered feasible for buildings having ample boiler capacity but limited power. It also adapts them for locations where to transmit power by belt connections would be expensive in the first cost and subsequent maintenance. The engines are constructed with special reference for disk wheel propulsion, occupying but little space, although driving the fan at sustained high speeds without appreciable noise or vibration. The support is a substantial cast iron bracket, and the appearance of the Engine is neat and compact. They require but little attention to keep in running order.



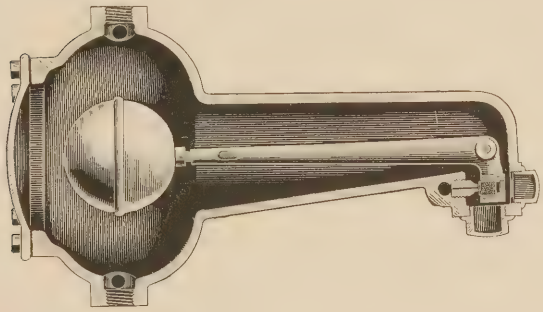
Size.	A	B	C	D	E	F	G	H	Size of Engine. D. S. A.	Size Steam.	Size Ex.	Weight Packed.	Weight Not Packed.	Price.
36	42½	37½	5¼	9½	11⅞	16⅞	43½	38¼	2 x 3	1	1¼	580	530	175.00
42	48¾	45	5½	12	10⅝	16⅞	45	43⅞	2½ x 3	1	1¼	725	675	210.00
48	57⅞	53½	6½	13	10⅛	16⅞	46½	52½	3 x 3	1	1¼	845	795	230.00
54	64¾	61	7	15	13	18 9/16	53 9/16	59	3½ x 4	1¼	1½	1010	960	355.00
60	69¾	66	7¼	17	12	18 9/16	54¾	64	4 x 4	1¼	1½	1080	1030	415.00
72	82½	80	7¾	22	12 13/16	21⅞	64 7/16	76	4½ x 5	1½	2	1895	1820	500.00
84	95	92½	8	27	12⅞	21⅞	69¾	89	5 x 5	1½	2	2065	1990	540.00

The Nason "Immersed Valve" Water Feeder for Low Pressure Steam Boilers.

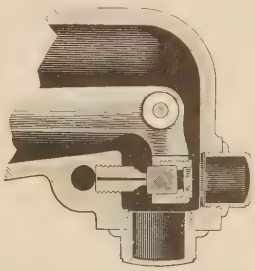


FULL VIEW

The Nason "Immersed Valve" Water Feeder, which we illustrate, has been designed for automatically controlling the water supply and maintaining the water level in boilers employed in steam heating under the low pressure conditions which universally obtain in a return or gravity system.



SECTIONAL VIEW.



ENLARGED VALVE SECTION.

In construction the Nason Feeder differs from all others in that, as the name implies, its valve is constantly immersed in water, which protects its seat from the destructive action of steam in the chamber, thereby greatly increasing its durability and giving a corresponding immunity from leakage.

It farther differs from others in having the controlling valve so placed that easy access to it is had by removal of a brass cap back of it and at the end of the Feeder.

Through this opening the valve is readily approached for the purpose of varying its distances from the seat, in order to thus adjust the height of the water level to any desired point. When injured or worn out the valve is removed through the same opening. It is made of pure gum packing, secured in a retaining cup—this material having been found in practice to be the most desirable for this service.

Although this device is carefully tested under fifty pounds pressure before leaving our factory, its use is not recommended where the steam pressure at any time exceeds twenty pounds, with a water pressure at inlet exceeding at all times the highest steam pressure on the apparatus, but with a maximum limit of forty pounds.

The Nason "Immersed Valve" Water Feeder for Low Pressure Boilers.

The copper floats used in our Feeders are made exclusively for this duty. They are of a special design, made from heavy weight metal, and are rigidly tested under pressure. Where the Feeder is installed under conditions prescribed by us, we guarantee the floats non-collapsible.

These Feeders may be used with or without a water gauge, but the use of such a gauge is recommended. As will be seen in the illustration, the Feeder is furnished with threaded openings on both sides, so that the device may be installed at either side of the heater, as may be most convenient.

As a safeguard against the destruction of boilers through carelessness of servants or inattention of caretakers they are a necessary adjunct, and no apparatus should be installed without one of these Feeders.

Instructions for Installing.

Place the Feeder conveniently near the boiler, and at such a height that its center coincides with the line at which it is desired to maintain the water level in the boiler.

Connect the top opening on the large end of the Feeder with the steam dome of the boiler above the water line, and the bottom opening with the boiler at some point below the water level.

The feed water connection is then to be made with the small end of the Feeder—care being taken to ascertain that the pressure of the water supply exceeds the highest steam pressure under which the boiler will at any time be operated.

After the heater has been filled with water and the Water Feeder is in operation, if it is found that the Water Level in the heater is either too high or too low, unscrew the brass cap at the back and turn the valve, by inserting a screw-driver, to the right to make the water level lower or to the left to make it higher.

Dimensions and List Prices.

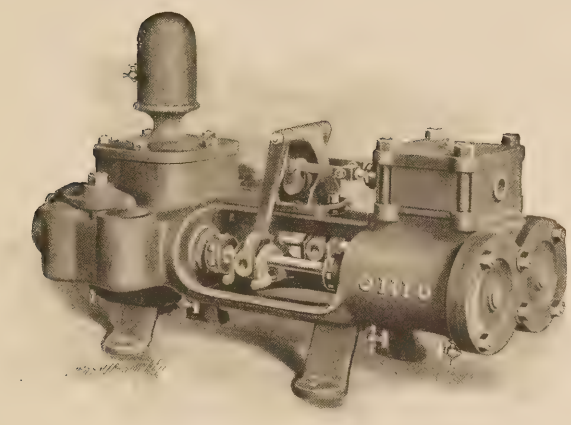
	Size.
Outside Length	23¼ inches.
Height	13⅜ "
Water Gauge Connection	½ inch.
Width	9 inches.
Boiler Connection	1 inch.
Feed Water Inlet	½ "

Price, without Water Gauge	20.00
" with " " Complete	24.00

Special.

The Nason "Immersed Valve" Feeder is the only one made in which both valve and seat can be removed through one opening without either disconnecting the Feeder or taking out the lever. To those who have used Feeders of the old type this feature alone is sufficient to insure their universal use.

The Ohio Steam Pump.



OHIO STEAM PUMP.

In the Ohio Pump unusual attention has been given to the question of accessibility, the suction valves being placed in small "pockets," or chambers, at the side of water cylinders, and, like all other interior working parts, are quickly accessible without disturbing the discharge valves or breaking any pipe connections—a feature which will be thoroughly appreciated by every operating engineer. This design of water end also provides for an almost straight course or passageway for the water through the pump, thus reducing the friction and wear on the working parts to a minimum.

The plungers, which are double acting, operate through central stuffing boxes containing soft, fibrous packing, which, by means of an adjustable device, may be kept absolutely tight under the most severe usage. This arrangement is invaluable for pumping liquids containing grit or foreign substances. All stuffing boxes used are of liberal size and depth, affording room for an ample supply of packing, which eliminates the nuisance and trouble of frequent re-packing.

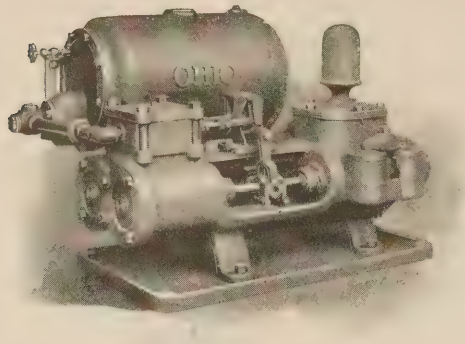
The steam valves used are the common slide valves, the simplest and most reliable known. The entire valve gear is made of best quality steel, affording abundant strength and durability. Workmanship and finish are equal to the best on the market.

The Ohio Steam Pump.

Sizes and Capacities, as Used for Boiler Feeding and General Purposes.

Size No.	Diameter Steam Cylinders.	Diameter Water Plungers.	Length of Stroke.	Capacity in Gallons per Minute at Proper Speed.	Horse Power of Boiler Pump will Supply Under Ordinary Conditions.	Sizes of Pipes for Short Lengths; to be Increased as Length Increases. Steam Pipe.	Exhaust Pipe.	Suction Pipe.	Discharge Pipe.	Shipping Weight.	Price.	Net Extra Charge for Brass Fittings.
2	2½	1½	3	6 to 15	30	¾	½	1	¾	100	65.00	2.00
3	3	2	3	8 to 20	50	½	¾	1¼	1	160	72.00	3.00
4	3½	2¼	4	15 to 30	75	½	¾	1½	1¼	250	98.00	4.00
5	4½	2¾	5	20 to 40	150	¾	1	2	1½	350	118.00	4.50
6	4½	3	5	24 to 48	200	¾	1	2	1½	350	124.00	4.75
7	5¼	3½	6	40 to 80	300	¾	1¼	2½	2	600	150.00	7.00
8	6	4	6	70 to 100	400	1	1¼	3	2½	700	185.00	8.50
9	6	4½	6	80 to 120	500	1	1¼	3	2½	700	210.00	10.00
10	7	4	7	75 to 110	600	1¼	1½	3	2½	800	265.00	11.00
11	7	4½	7	85 to 125	700	1¼	1½	4	3	800	270.00	13.00
12	7½	4½	10	100 to 170	900	1½	2	4	3	1200	345.00	15.00
13	7½	5	10	130 to 210	1150	1½	2	4	3	1200	355.00	17.00
14	8	5	10	130 to 210	1150	1½	2	4	3	1500	435.00	25.00
15	10	5	10	130 to 210	1150	2	2½	4	3	2200	475 00	30.00
16	10	6	10	180 to 300	1500	2	2½	5	4	2200	495.00	35.00
17	10	7	10	245 to 400	----	2	2½	6	5	3000	575.00	50.00
18	12	7	10	245 to 400	----	2½	3	6	5	3200	695.00	50.00
19	12	8	10	260 to 500	----	2½	3	7	6	4000	720.00	60.00
20	14	7	10	245 to 400	----	2½	3	6	5	4500	800.00	50.00
21	14	8	10	260 to 500	----	2½	3	7	6	4200	875.00	60.00
22	14	9	10	350 to 580	----	2½	3	7	6	6000	925.00	70.00
23	16	8	12	270 to 520	----	2½	3	7	6	6300	950.00	60.00
24	16	9	12	370 to 650	----	2½	3	7	6	6500	1050.00	70.00
25	16	10	12	410 to 850	----	2½	3	8	7	7000	1090.00	80.00

The Ohio Automatic Feed Pump and Receiver.



OHIO AUTOMATIC FEED PUMP AND RECEIVER.

This Machine is invaluable for receiving the condensation from heating systems and automatically returning it direct to the boilers while in its hottest condition. This not only increases the efficiency of the heating plant, but at the same time provides a saving in fuel consumption. It is, therefore, a matter of economy for use in connection with brick and cement plants, lumber-mills, factories, hotels, buildings, etc.

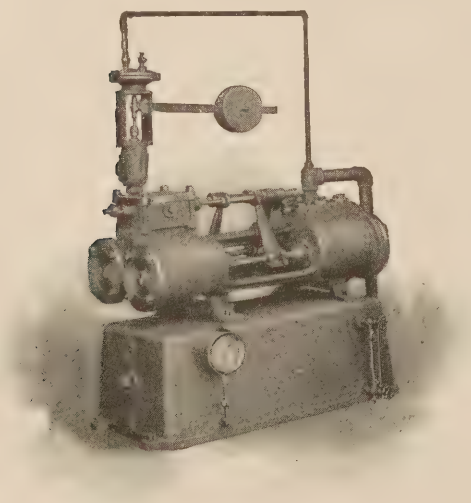
In addition to the economy in the use of fuel, gained by feeding the boiler with water slightly below the vaporizing point, which is otherwise impossible without the use of a special water-heater, this Machine has other advantages of equal importance. The boiler is provided with a pure water supply, and the formation of lime and objectionable scale is thus eliminated. It is unaffected by variations of steam pressure, and is absolutely positive and automatic under all conditions of service. It returns the water to the boiler in a steady and continuous flow as it enters the Receiver, and will at all times keep the pipes in a dry condition.

Its usefulness is not limited to that of boiler feeding, it being admirably adapted for regulating the circulation of brine in refrigerating plants. It may also be successfully used as a temporator apparatus in beer-cooling and for other circulating purposes where automatic action is essential.

As the water flows into the Receiver, it raises a ball float therein, which opens the valve controlling the supply of steam for operating the Pump. As the water is removed from the Receiver, the float lowers, thus closing the valve and gradually stopping the Pump. The Pump operates only as the water enters the Receiver.

Size of Pump.	Radiating Surface will Drain in Square Feet.	Length.	Width.	Height.	Price.	Net Extra for Brass Fittings.
3 x 2 x 3	5,000	2 ft. 6 in.	2 ft. 8 in.	2 ft. 2 in	200.00	3.00
3½ x 2¼ x 4	6,000	3 " 0 "	2 " 8 "	2 " 2 "	225.00	4.00
4½ x 2¾ x 5	10,000	3 " 4 "	2 " 8 "	2 " 2 "	250.00	4.50
4½ x 3 x 5	12,000	3 " 4 "	2 " 8 "	2 " 2 "	255.00	4.50
5¼ x 3½ x 6	20,000	3 " 10 "	3 " 0 "	2 " 2 "	290.00	7.00
6 x 4 x 6	40,000	4 " 7 "	3 " 4 "	2 " 10 "	325.00	9.00
7 x 4½ x 7	60,000	4 " 8 "	3 " 6 "	2 " 10 "	410.00	14.00

The Ohio Brewers' Automatic Air Pump.



OHIO AUTOMATIC AIR PUMP.

For racking-off and moving beer from floor to floor, filling casks and kegs by means of compressed air, this Pump is unequaled. It may be placed in any part of the brewery and the air carried through hose to wherever needed. The air, before being used, is forced through the Receiver, which is partially filled with water, thus filtered and rendered perfectly free from all impurities. Each Pump is fitted with a pressure regulator which automatically controls the steam supply for operating the Pump, stopping as the desired pressure is obtained and starting as the air is used or withdrawn. The regulator may be set to maintain any desired pressure up to 35 pounds. This pressure can be increased or diminished by adding to or taking off weight on the regulator.

Construction.

The cut-off valves are operated by the piston rods, the valve stem on one side moving the valve for the delivery of steam for the other side, and vice versa; consequently the Pump is afforded an absolutely positive action. The valve mechanism is so arranged that the air pistons operate against a constant pressure, thereby securing a smooth and steady stroke. There is no dead center, and the Pump is guaranteed to start and stop promptly, and to take a full stroke under all conditions of service. The entire apparatus is simple and unique in design, no complicated working parts liable to get out of order, and it requires little, if any, attention.

Diameter of Steam Cylinders, Inches.	Diameter of Air Cylinders, Inches.	Length of Stroke, Inches.
4½	5	6
4½	6	6
6	7	6
6	8	6

Annual Capacity of Brewery.	Price, Including Receiver.
10,000 to 20,000 barrels	210.00
20,000 to 50,000 "	220.00
50,000 to 75,000 "	265.00
75,000 to 125,000 "	275.00

Larger sizes built to order.

Rotary Force Pumps.

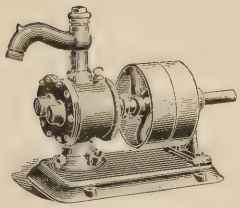


Fig. 1185½.

Fig. 1185½ represents our Rotary Force Pump, with tight and loose pulleys for power. Beyond the pulleys is a strong bearing with babbitt-lined boxes in which the driving shaft runs. The shaft is also made long enough to take a balance wheel beyond the bearing, but this wheel is only furnished at extra price. This Pump will be found serviceable for furnishing considerable volume to elevations not exceeding 60 feet. They are largely used in creameries, breweries, wine cellars, oil refineries, etc. Fig. 1281, Power Rotary Force Pump, is the same as Fig. 1185½ described above but without spout piece, the top of case being tapped for iron pipe as per sizes given in table below. These are largely used for pumping to tanks.

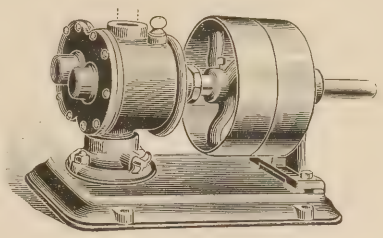
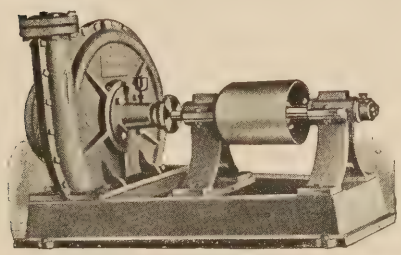


Fig. 1281.

By the addition of a metallic lower valve these Pumps will handle hot liquids. Hot liquids should always flow to the Pump, as rising vapors prevent any Pump from forming a vacuum, and thereby "sucking" the liquid. For handling acid substances bronze pumps should be used.

Fig.	No.	Capacity per Minute 100 Revs. Gallons.	Suction. In. Pipe.	Discharge. Inch.		Pulleys, Each. Inch.	*Lift and Force. Feet.	Iron.	Bronze Case and Cams.	†Bronze.
1185½	1	10	1¼	1	Hose.	8 x 2½	60	27.00	49.00	60.00
"	2	13	1¼	1	Hose.	8 x 2½	60	32.00	56.00	65.00
"	3	17	1½	1¼	Hose.	8 x 2½	60	38.00	63.00	75.00
"	4	27	2	1½	Hose.	12 x 3½	60	48.00	78.00	100.00
"	5	36	2	2	Hose.	12 x 3½	60	54.00	90.00	120.00
"	6	45	2½	2½	Hose.	24 x 4	60	80.00	135.00	175.00
1281	1	10	1¼	1¼	Pipe.	8 x 2½	60	26.00	48.00	58.00
"	2	13	1¼	1¼	Pipe.	8 x 2½	60	31.00	55.00	63.00
"	3	17	1½	1½	Pipe.	8 x 2½	60	37.00	62.00	73.00
"	4	27	2	2	Pipe.	12 x 3½	60	46.00	76.00	96.00
"	5	36	2	2	Pipe.	12 x 3½	60	52.00	88.00	116.00
"	6	45	2½	2½	Pipe.	24 x 4	60	77.50	132.50	170.00

*Total lift and force from supply to point of delivery, pump not more than 20 feet above water.
†Bronze Pumps have all parts coming in contact with the liquid of bronze.



HORIZONTAL BELT DRIVEN.

Centrifugal Pumps.

This style of pump is largely used by paper and pulp mills and for irrigating and drainage purposes; in fact it is the favorite for general all around use. The shaft is of steel, the bearings and stuffing box are extra long; the castings are extra heavy and the whole outfit, with little attention, will wear for years without renewal of any part. Every pump is thoroughly tested before leaving our plant, and the buyer is thus assured of an outfit that will work properly as soon as it is connected up.

No. of Pump.	Dia. Suction Flange. Inches.	Capacity. Gals. per Minute.	Horse Power for Each Foot of Lift.	Dia. and Face of Pulley. In.	Floor Space. Inches.	Shipping Wt. Lbs.	Iron Hor. Pump.	Iron Hor. Pump, Steam Primer Fitted.	Brass Pump.	Brass Pump Steam Primer Fitted
1½	2½	62 to 74	.028 to .034	5 x 5	18 x 32	170	45.00	55.00	85.00	105.00
1¾	3	70 to 100	.041 to .048	6 x 6	18 x 32	200	60.00	70.00	100.00	120.00
2	4	105 to 125	.054 to .065	7 x 7	25 x 40	350	75.00	90.00	125.00	150.00
2½	4	150 to 180	.076 to .091	7 x 8	25 x 40	390	90.00	105.00	150.00	175.00
3	5	230 to 276	.117 to .140	7 x 8	25 x 42	430	110.00	130.00	175.00	210.00
4	6	400 to 475	.202 to .243	8 x 10	29 x 43	610	130.00	155.00	275.00	330 00
5	6	625 to 750	.316 to .377	10 x 10	32 x 56	905	165.00	195.00	340.00	420.00
6	8	900 to 1080	.455 to .545	12 x 12	32 x 58	1135	200.00	240.00	410.00	495.00
8	10	1560 to 1820	.789 to .947	18 x 12	44 x 67	1590	310.00	375.00	------	------
10	12	2460 to 2950	1.24 to 1.50	20 x 12	50 x 72	2415	395.00	470.00	------	------
12	14	3630 to 4355	1.84 to 2.21	24 x 14	54 x 82	3835	500.00	575.00	------	------

When more than 25 feet of discharge pipe is used it is advisable to use pipe a size or two larger than the pump discharge.

Pumps furnished with either suction or discharge flanges to fit any size pipe without extra charge, if so ordered.

Number of Pump is same as diameter of discharge flange.

Plunger Boiler Feed Pump with Stub End for Machine Power.

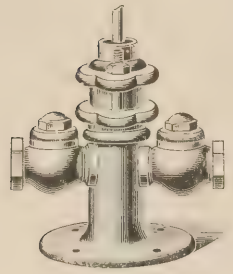


Fig. 485.

Fig. 485 represents Power Boiler Feed Pump with trunk plunger, which we offer in several sizes given below. Suction and discharge brass check valves are screwed into opposite sides of cylinder. This cheap yet serviceable Pump has general application for feeding steam boilers under moderate pressure, or for any limit duty indicated in our tables.

Fig. 485.

No.	Diameter Cylinder. Inches.	Stroke. Inches.	Capacity per Min., 60 Strokes. Gallons.	Suction. Inch Pipe.	Discharge. Inch Pipe.	*Lift and Force. Feet.	Equiv. Pressure. Lbs.	Price.
2	1¼	6	1.27	¾	¾	150	64	10.00
3	1¼	6	1.84	1	1	150	64	15.00
4	1½	3	1.37	¾	¾	150	64	14.00
5	2	3	2.45	1	1	120	51	18.00
6	2½	3	3.82	1	1	90	38	22.00
7	3	3	5.50	1¼	1¼	60	25	27.00
8	2	6	3.26	1¼	1¼	120	51	22.00
9	2½	6	5.10	1¼	1¼	90	38	30.00
10	3	6	7.35	1½	1½	120	51	40.00

* Total lift and force from supply to point of delivery, pump not more than 20 feet above water. Hot water must flow to pump.

Rotary Force Pump with Balance Wheel for Hand Power.

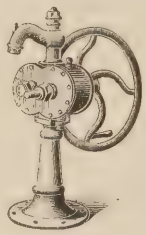


Fig. 297½.

Fig. 297½ represents one of our Hand Rotary Force Pumps. They are adapted for every place or purpose where a lift and force pump can be used, and will pump from a well or cistern, or can be moved to any place where water is within suction distance and instantly operated.

The cam shaft is long enough to put another fly-wheel on, so that four men can work if necessary. Brass plugs are provided at top and bottom of case for letting out the water in cold weather. After taking out the plugs reverse the cams two or three times around so as to get the water down from the top. We would advise the use of a check valve at end of suction pipe, as it keeps the pipe always filled and renders the pump ready for use with a single revolution. By the addition of metallic lower valve, hot liquids can be handled as well as cold. Hot liquid must always flow to the pump as the vapors prevent any pump from making a vacuum and thereby "sucking" the liquid.

For wine or liquor a bronze pump should always be used, as it is unaffected by the action of acids.

Fig. 297½.

No.	Capacity per Min., 100 Revolutions. Gallons.	Suction. Inch Pipe.	Discharges—End of Spout. Inch Hose.	Discharges—Top of Spout. Inch Pipe.	Diameter Balance Wheel. Inches.	*Lift and Force. Feet.	Iron. Price.	Bronze Case and Cams. Price.	†Bronze. Price.
1	10	1¼	1	1	20	60	20.00	42.00	52.00
2	13	1¼	1	1	20	60	23.00	47.00	57.00
3	17	1½	1¼	1¼	20	60	27.00	52.00	64.00
4	27	1½	1½	1½	20	60	35.00	65.00	87.00
4A	27	1½	1½	1½	36	60	39.00	69.00	91.00
5	36	2	2	2	20	60	40.00	75.00	105.00
5A	36	2	2	2	36	60	44.00	79.00	109.00
6	45	2½	2½	2½	36	60	50.00	100.00	140.00

* Total lift and force from supply to point of delivery, pump not more than 15 to 20 feet above water.
† "Bronze" pumps have all parts coming in contact with the liquid of bronze.

Rotary Force Pump with Base.

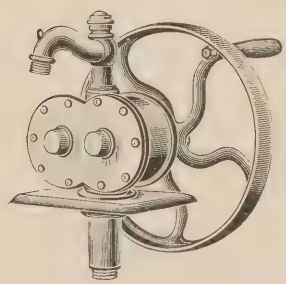


Fig. 665.

Fig. 665 shows one of our Hand Rotary Force Pumps, arranged on a flat base or plate, 7 x 10 inches, with a cast iron hub projecting 4 or 5 inches below it.

We always fit both suction and discharge for hose coupling unless otherwise ordered, but can fit them also for gas pipe if so advised. For handling wine, liquor or any acid substances, bronze pumps should be used.

Fig. 665.

No.	Capacity per Minute, 100 Revolutions. Gallons.	Suction. Inch Pipe.	Discharges—End of Spout. In. Hose.	Discharges—Top of Spout. In. Pipe.	Diameter Balance Wheel. Inches.	Iron. Price.	Bronze Case and Cams. Price.	†Bronze. Price.
1	10	1¼	1	1	14½	19.50	41.50	51.00
2	13	1¼	1	1	14½	22.50	46.50	56.00
3	17	1½	1¼	1¼	14½	26.75	51.75	64.00
4	27	1½	1½	1½	20	36.50	67.00	89.00
5	36	2	2	2	20	42.00	77.50	107.00

FIG. 464 (not illustrated).—Arranged for holding the suction pipe of the pump rigid in the bung of a barrel. Suitable for transferring fluids of any consistency from barrels to reservoirs, etc. Prices include suction pipe, hose coupling, hook and holder.

No.	Capacity per Minute, 100 Revolutions. Callons.	Suction Inch Pipe.	Discharges—End of Spout. Inch Hose.	Discharges—Top of Spout. Inch Pipe.	Iron. Price.	Bronze Case and Cams. Price.	†Bronze. Price.
1	10	1	1	1	17.00	39.00	49.00
2	13	1	1	1	20.00	44.00	54.00
3	17	1¼	1¼	1¼	24.00	49.00	61.00

† "Bronze" pumps have all parts coming in contact with the liquid of bronze.

Brass Two-Cylinder Force Pump with Detachable Iron Lever.

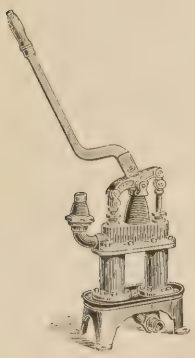


Fig. 773.

Fig. 773 represents our Two-Cylinder Force Pump with brass cylinders, check valve, rods and stuffing boxes, making it practically a brass pump. This pump has two vertical working pistons actuated by one lever, having the full effect of a double-acting pump.

The suction and discharge are fitted for lead or iron pipe, as ordered.

Fig. 773.

No.	Diameter Cylinders. Inches.	Stroke. Inches.	Capacity per Revolution. Gallons.	Suction. Inch Pipe.	Discharge. Inch Pipe.	*Lift and Force. Feet.	Brass.
0	2	4	.11	1¼	1	150	30.00
2	2½	4	.17	1¼	1¼	125	35.00
4	3	4	.24	1½	1¼	100	45.00

* Total lift and force from supply to point of delivery, pump not more than 25 feet above water.

House Force Pump with Check Valve and Revolving Fulcrum.

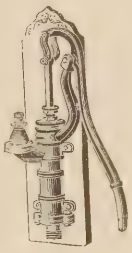


Fig. 391.

Fig. 391 represents our House Force Pump on plank, with upper check valve discharge. It has brass-cased piston-rod, working through brass gland and attached to lever by links. Pump furnished without plank at fifty cents less list. This figure represents a very popular style of force pumps for house use over sink, for tank pumping, etc. Special brass pumps made to order. Pump cylinder can be emptied of water by raising lever to extreme height, thus tripping valves.

Regular fitting, iron pipe. Fitted for lead pipe to order.

Fig. 391.

No.	Diameter Cylinder. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inch Pipe.	Discharge. Inch Pipe.	*Lift and Force. Feet.	Iron. Price.	Brass-Lined. Price.	Brass Cylinder. Price.
0	2	6	.08	1	1	60	9.00	11.50	13.50
2	2½	6	.13	1¼	1¼	60	9.50	12.00	14.00
4	3	6	.18	1¼	1¼	60	11.00	13.50	16.00
6	3½	7½	.31	1½	1½	40	17.00	20.50	24.00
8	4	7½	.41	2	1½	40	18.00	23.00	30.00

* Total lift and force from water to point of discharge, pump not more than 25 feet above water.

Plunger Boiler Feed Pump with Column and Two Pulleys, for Hand or Machine Power.

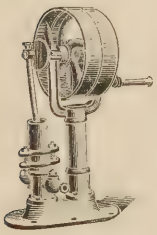


Fig. 484.

Fig. 484 represents improved pattern of Power Boiler Feed Pump with crank shaft, face plate, tight and loose pulleys, for hand or machine power. On the end of driving shaft opposite the face plate is a heavy iron crank with wrought iron handle for working pump when necessary.

Pumps may be employed for feeding steam boilers under moderate pressure, or any other service within limits cited in our table below.

Has special bronze check valves and outside-packed plunger and is capable of handling hot water.

Fig. 484.

No.	Diameter of Cylinder. Inches.	Stroke. Inches.	Capacity per Min., 60 Strokes. Gallons.	Suction. Inch Pipe.	Discharge. Inch Pipe.	*Lift and Force. Feet.	Equivalent Pressure. Lbs.	Pulley. Inches.	Price.
0	2	3½	2.45	1	1	120	60	16 x 3	40.00
2	2½	3½	3.82	1	1	90	45	16 x 3	42.50
4	3	3½	5.51	1¼	1¼	60	30	16 x 3	45.00

* Total lift and force from supply to point of delivery, pump not more than 25 feet above water. Hot water must flow to pump.

Hydraulic Rams and Test Pumps.

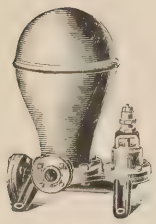


Fig. 345½.
SINGLE RAM.

The Hydraulic Ram represents the most efficient and automatic labor-saving device known for raising water any distance where a sufficient supply and head are attainable, and the slight expense for first outlay and maintenance considered render them most desirable for supplying running water in any quantity. Our castings are all heavy in pattern and of proportionate strength. The air chamber is large, thus relieving it of all undue strain and aiding its working, while the valve stem and case (made of the best bronze metal) are of a new and improved design, calculated to develop the greatest possible efficiency. We can still further increase their efficiency by substituting a new and improved style of brass poppet or spring valve in place of the ordinary leather one in the air chamber, thus rendering them metallic fitted throughout.

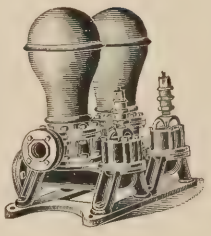


Fig. 346.
DOUBLE RAM.

Rams will work successfully where the spring or brook is only three feet higher than the Ram; yet, as the height or head increases, the more powerful the Ram operates, and its ability to force water to greater elevation and distance correspondingly strengthened. The best results will be secured where the head of fall is proportioned to work. See table, etc.

Fig. 345½. Single Ram.

Size. No.	Supply per Minute to Operate Ram. Gallons.	Length of Drive Pipe. Feet.	Delivery Gallons per Hour.	Head of Fall. Feet.	Height of Delivery Above Ram.	Pipes Drive. Inches.	Pipes Discharge. Inches.	*Price. Leather Valve.
2	1 to 2	50 to 75	10 to 15	3	20	¾	½	9.00
3	2 to 4	50 to 75	10 to 20	4	30	1	½	11.00
4	3 to 7	50 to 100	15 to 35	5	40	1¼	¾	14.00
5	6 to 10	50 to 150	30 to 60	7	50	2	1	22.00
6	11 to 25	50 to 200	65 to 100	8	60	2½	1¼	40.00
7	20 to 40	50 to 200	90 to 175	10	80	3	1½	75.00
8	25 to 75	50 to 200	150 to 300	14	100	4	2	125.00

NOTE.—Numbers 2, 3 and 4 can be fitted for wrought iron or lead pipe as ordered; 5, 6, 7 and 8 for wrought iron pipe only.

* Leather valve under air chamber.

Fig. 346. Double Ram.

Size. No.	Supply per Minute to Operate Ram. Gallons.	Length of Drive Pipe. Feet.	Pipes Drive. Inches.	Pipes Discharge. Inches.	Price. †Brass Spring Valve.
6	22 to 50	50 to 200	2½	1½	90.00
7	40 to 80	50 to 200	3	2	160.00
8	50 to 150	50 to 200	4	2½	260.00

† Brass spring valve under air chamber.

Hydraulic Pressure or Test Pumps for Testing Boilers, Tanks, Etc.

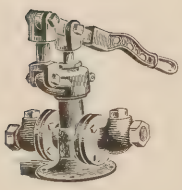


Fig. 867.

Fig. 867 represents a new Hydraulic Pressure or Test Pump, of compact build.

It has a revolving top, admitting its being worked in any position, and a sectional lever, which can be changed to give greatest leverage. The suction and discharge valves (flanged and bolted to cylinder) are of a new and improved type, with brass valve seats, poppets and caps.

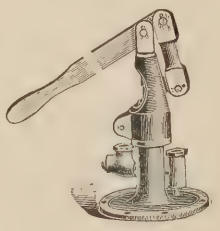


Fig. 941.

Fig. 867. Regular Service Pump.

No.	Diameter Ram. Inches.	Stroke. Inches.	Suction and Discharge. Inch Pipe.	Working Pressure. Pounds.	Price.
0	¾	5	1	700	18.50
1	1	5	1	550	19.00
2	1¼	5	1	400	19.50
3	1½	5	1	200	20.00

Can furnish with strong wood barrow, with cast iron tank underneath, at 10.00 extra list.

Fig. 941 is designed to supply the demand for a Test Pump, capable of generating any desired pressure up to 6,000 pounds per square inch. The body or cylinder, as well as ram, is of steel, the valves of best gun metal and the lever forged from wrought iron.

Fig. 941. High Service Pump.

Diameter Ram. Inches.	Stroke. Inches.	Suction and Discharge. Inch Pipe.	Working Pressure. Pounds.	Price.
½	2	¼	6000	30.00

Artesian Well Working Head with Forked Rod, Pitman and Guide.



Fig. 1127.

FIG. 1127. Provided with stuffing box, guide, guide rod, brass cased piston rod and pitman for machine power. It has an intermediate flange for pipe connection sizes up to and including 3-inch. Forked rod is supplied with each working head. We can furnish everything complete for wells of any depth.

Always specify size suction and discharge pipe.

Fig.	Stroke. Inches.	Suction. Inches.	Discharge. Inches.	Well Rod.	*Lift and Force.	Price.
1127.	10	1¼ to 3	1¼ to 3	For size iron or wood rod ordered.	2¾ in. cyl., 225 ft.	30.00
1127.	16	1¼ to 3	1¼ to 3		3¼ " 175 ft	35.00
					3¾ " 100 ft.	

Cylinders like Figs. 1230, 548, 904 are required with this Working Head and cost extra.

*Depth of well to which Working Head may be adapted by placing cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

"New Deluge" Suction Pump, Brass-Lined Cylinder and Removable Valves.

Fig. 829 represents our improved "New Deluge" Pump, which is designed for shallow or small vessels of not more than 15 to 20 feet depth of hold; for contractors who wish to pump large quantities of water from excavations, etc.; for irrigation or any other purpose where a compact and capacious pump is desired.

The cylinder is lined with brass, the valves rubber-faced, and the lever socket made at such an angle that the bent wrought iron lever when put in one side up is right for ordinary pumping, and by simply changing it to the other side up it becomes a vertical lever. This lever may also be worked from three different points, as shown by lugs in cut.

The pump has large valves accessible and removable by hand from above, while to the bottom of the base is bolted a flange which may be cut for any size pipe ordered, or changed for other sizes if desired.

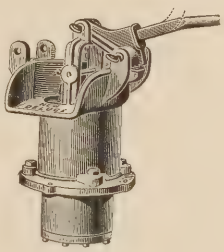


Fig. 829.

Fig. 829.

Diameter Cylinder. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inch Pipe.	Lift. Feet.	Brass Lined.
6	4	.49	2½	20	23.00
8½	6	1.47	3	20	30.00

Can furnish 8½-inch by 6-inch iron (not brass lined) pump fitted 4-inch pipe, with special foot valve for pumping asphaltum, at 50.00 list.

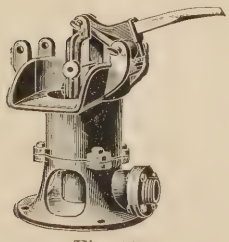


Fig. 836.

Fig. 836 represents our "New Deluge" Pump described above, arranged with elevated base to be used above deck or foundation where it is desired to use hose suction or more convenient to make pipe connections in this manner. The suction flange is fitted for sizes of wrought iron pipe given below, unless otherwise ordered, or can be cut hose gauge to take our regular suction half hose coupling, which is furnished at extra price.

Fig. 836.

Diameter Cylinder. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inch Pipe.	Lift. Feet.	Brass Lined.
6	4	.49	2½	20	24.00
8½	6	1.47	3	20	31.00

Well Force Pump Packing-Box Heads for Wind Mills.



Fig. 216.



Fig. 217.



Fig. 707.



Fig. 1007.

We represent herewith our several styles Wind Mill Packing-Box Heads with brass glands and brass-cased rods. Fig. 1007 represents an all-brass Packing-Box Head for open or drilled wells. The discharge is formed by screwing a tee in suction pipe below. This, however, is not included in our price.

Fig. 216.

Size Pipe. Inches.	Length Stroke. Inches.	Well Rod. Inch.	Price.
1¼	12	7/16	5.00
1½	12	7/16	5.50
2	12	7/16	6.00
2½	12	½	7.00
3	12	½	7.50
4	12	⅝	9.00

Fig. 217.

Size Pipe. Inches.	Length Stroke. Inches.	Well Rod. Inch.	Price.
1¼	12	7/16	5.00
1½	12	7/16	5.50
2	12	7/16	6.00
2½	12	½	7.00
3	12	½	7.50
4	12	⅝	9.00

Fig. 707.

Size Pipe. Inches.	Length Stroke. Inches.	Well Rod. Inch.	Price.
1	12	7/16	3.00
1¼	12	7/16	3.00
1½	12	7/16	3.00
2	12	½	3.00
2½	12	½	3.75

Fig. 1007.

Size Pipe. Inches.	Length Stroke. Inches.	Well Rod. Inch.	Price.
1	12	7/16	4.00
1¼	12	7/16	4.00
1½	12	7/16	5.00
2	12	7/16	6.00
2½	12	7/16	7.50
3	12	½	10.00

Force Pump Head with Wind Mill Top and Wood Lever.



Fig. 1260.

Fig. 1260 is offered as a very desirable Force Head for operating by wind mill or by hand. It is compact and strong. Has double guide for polished rod. With wind mill allows 10-inch stroke, for hand 5-inch stroke. A powerful leverage is afforded, making easy work. We regularly furnish tapped for 1¼-inch pipe, but can tap for 1½ or 2-inch if so ordered.

Fig. 1260.

Stroke.	Suction, inches.	Discharge.	Well Rod, inch.	Price.
10 inch Mill and 5 inch Hand.	2	¾ inch hose and 1-inch Pipe.	7/16	7.50

Artesian Well Working Heads with Double Rod Guide and Power Connection.



Fig. 979.

Fig. 979 is especially designed to use with our Artesian Pump Cylinders. Piston rod is kept in perfect alignment by double guides at side, while stuffing box below adapts it for forcing equally as well as raising water. The power attachment is hinged and made to fit wood rod of wind mill, though it may be readily adapted for any other power and connecting rod.

Fig. 1249 is of same construction as Fig. 979, with the addition of a large air chamber, which adapts it for working against heavy head. Wood rod coupling will be furnished when ordered, at extra price. Well rod is size iron or wood rod ordered.

Figs. 979 and 1249.

No.	Stroke. Inches	Suction. Inches.	Discharge. Inches.	*Lift and Force.	Fig. 979.	Fig. 1249.
1.	16	2, 2½ or 3	1, 1¼ or 1½	2¾ in. cyl., 300 ft.	15.00	25.00
1.	24	2, 2½ or 3	1, 1¼ or 1½	2¾ " 300 ft.	17.50	27.50
2.	24	3½, 4 or 4½	1½, 2 or 2½	4¼ " 250 ft.	30.00	40.00
2.	30	3½, 4 or 4½	1½, 2 or 2½	4¼ " 250 ft.	32.50	42.50
3.	24	5 or 6	2½ or 3	5¾ " 200 ft.	35.00	50.00
3.	30	5 or 6	2½ or 3	5¾ " 200 ft.	37.50	52.50
3.	36	5 or 6	2½ or 3	5¾ " 200 ft.	40.00	55.00

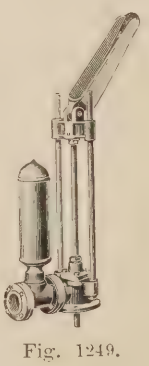


Fig. 1249.

Connecting Parts for Single-Acting Deep-Well Pumps.



Fig. 68. Fig. 76.

Fig. 76, Valve Rod, is a forged wrought-iron piece used to connect the deep well plunger and the sucker rod. It is comparatively much less in cross-section than the wood sucker rod, and of a length sufficient to prevent the sucker rod from entering the top end of pump cylinder and thereby restricting the flow of water.

Fig. 68, Sucker Rod Couplings, are of forged wrought-iron, complete and ready to be attached to sucker rods.

Fig. 77, Wood Sucker Rods, are made of the best white ash. The prices include all necessary couplings attached.

Size Square Wood Sucker Rods. Inches.	Couplings, Valve Rods, etc., have Connecting Threads. Inch Pin.	Inside Diameter of Deep Well Pump. Inches.	Coupling. Fig. 68. Price per Pair.	Valve Rod. Fig. 76. Price Each.	Sucker Rod and Coupling. Fig. 77. Price per Foot.
1	5/8	1 3/4	1.00	2.50	.12 1/2
1 1/4	5/8	2 1/4	1.25	3.00	.15
1 1/2	7/8	2 3/4	1.50	3.75	.20
2	1	3 1/4	2.50	4.75	.25
2 1/4	1 1/8	3 3/4	3.75	5.25	.40
2 1/2	1 1/4	4 1/4	5.00	6.00	.50
3	1 3/8	4 3/4	6.25	6.75	.65
3 1/2	1 1/2	5 3/4	8.75	7.50	.90
5	2	7 3/4	12.50	15.00	1.25



Fig. 77.



Fig. 9.

Fig. 9. Wood Rod Couplings.

For 1	and 1 1/8-in. Rod,	plain,	2	hole,	per pair,	.10
" 1	" 1 1/8 " "	galv.,	2	"	"	.14
" 1	" 1 1/8 " "	plain,	3	"	"	.16
" 1	" 1 1/8 " "	galv.,	3	"	"	.20
" 1 1/4	" 1 3/8 " "	plain,	3	"	"	.20
" 1 1/4	" 1 3/8 " "	galv.,	3	"	"	.24

Malleable Drive Cap.

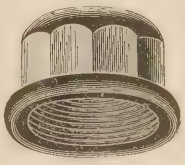


Fig. 510.

For 1 1/4-in. Pipe,	each,			.20
" 1 1/2 "	"	"	"	.24
" 2 "	"	"	"	.44

Steel Drive Heads—Solid.



Fig. 181.

For 1 1/4-in.	pipe,	each		1.50
" 1 1/2 "	"	"		2.00
" 2 "	"	"		2.50
" 2 1/2 "	"	"		6.00
" 3 "	"	"		9.00
" 4 "	"	"		16.00

Fig. 729. Sand Pump and Drill Combined.

	Pipe Thread Connection.	Actual Size of Bit. Inches.	Price.
1	inch	1 3/4	1.25
1	"	2	2.00
1	"	2 1/2	3.00
1 1/4	"	3	4.00



Fig. 729.

Force Pump Standards and Heads.



Fig. 422.
No. 1.
FORCE PUMP STANDARD.

FIG. 422.—Wind Mill Force Pump Standard, made in three sizes. Air chamber formed by enlarging stock above spout. Revolving bearer top is attached by strong through bolts. Outlet is provided back of spout for attaching pipe if desired. All spouts are flanged and bolted, permitting easy exchange for cock spout. Tapped for suction pipe near the spout. Furnished with nut and hose tube; also brace. Standards can be tapped for any size pipe up to 2-inch, but unless otherwise ordered we tap 1¼-inch. With Standards tapped 2-inch we furnish coupling for 1-inch wood-sucker rod. Wind mill slides are not sent unless ordered.

The No. 0 Standard has extension stroke guide adapting it for 10-inch stroke with wind mill. It has 6-inch stroke by hand.

FIG. 401.—One of our best forms of Wind Mill Standards, with revolving top and while not the cheapest, it possesses features which will commend it.

Pipe is connected in the body, close under the spout and either 1, 1¼, 1½ or 2-inch can be used if so ordered, but it is always fitted as below unless otherwise directed. This Standard cannot be fitted for 2½-inch pipe. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.



Fig. 401.
HAND OR WIND MILL.

Fig. 422.

Fig.	Stroke. Inches.	Suction. Inches.	Discharges.	Well Rod.	*Lift and Force.	No. 0. Price.	No. 1. Price.	No. 2. Price.
422	6	1¼	1¼ in. pipe and ¾ in. hose	7/16 in.	2½ in. cyl., 100 ft.	9.50	10.00	11.00
422	10	2	1¼ " " ¾ "	7/16 and 1 in.	3 " 60 "	----	11.00	12.00

Fig. 401.

Fig.	Stroke. Inches.	Suction. Inches.	Discharges.	Well Rod.	*Lift and Force.	Price.
401	6	1¼	1¼ " " ¾ "	7/16 in.	2½ " 100 "	13.00
401	10	2	1¼ " " ¾ "	7/16 and 1 in.	3 " 60 "	14.00

Force Pump Working Heads for Hand and Wind Mill.



Fig. 685.



Fig. 686.



Fig. 690.

These Working Heads are fitted with revolving top and sectional base. They are exceptionally strong and heavy, and adapted for use wherever wind mill or other power can be used. Flange is fitted for 1, 1¼, 1½, 2 or 2½-inch pipe, as ordered. Working Heads tapped for 2-inch pipe have coupling for 1-inch wood rod. Forked rod furnished at extra price. Wind mill slides are not furnished unless especially ordered.

Fig.	Suction. Inches.	Discharge. Inches.	Well Rod.	*Lift and Force.	6-Inch Stroke. Price.	10-Inch Stroke. Price.
685	1¼	1¼	7/16 to 1 in.	2½ in. cyl., 100 ft.	13.00	14.00
686	1¼	1¼	7/16 " 1 "	3 " 60 "	15.00	16.00
690	1¼	1¼	7/16 " 1 "	3 " 60 "	17.00	18.00

Cylinders like Figs. 1230 and 1231, are required with these Pump Standards and cost extra.

*Depth of wells to which Pump Standard may be adapted by placing cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Challenge Double-Acting Force Pumps.



Fig. 470.

Fig. 470 represents our "Challenge" Double-Acting Force Pump of great compactness and power, for use on shipboard, wharves, around factories, mills, warehouses, etc., and in residences for tank pumping. On all "Challenge" Pumps piston rods are brass-cased, valves and valve seats of brass, cylinders either brass-lined or brass, therefore working parts are non-corrosive.

In mines these Pumps are almost invaluable, as they are unaffected by mine water and will force to great elevation.

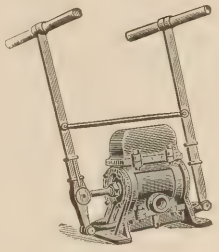


Fig. 562.

Fig. 562 represents our "Challenge" Double-Acting Force Pump, described above, in a larger form, and arranged with double levers. This Pump has only one stuffing box. For use on ship wharves, about factories, mills, mines, warehouses, etc., it is capable of inestimable service. We regularly fit iron pipe. Fitted for hose to order. Pumps furnished with fibrous or metallic-packed pistons to order.

Fig.	No.	Diameter Cylinder. Inches.	Stroke. Inches.	Capacity per Revolution. Gallons.	Suction. In. Hose.	Discharge. In. Hose.	*Lift and Force. Feet.	Brass Lined Cylinder. Price.	Brass Cylinder. Price.	†Brass. Price.
470	2	2½	4½	.19	1¼	1	150	27.00	55.00	75.00
470	4	3	4½	.28	1¼	1	150	28.00	55.00	75.00
470	8	4	4½	.49	1½	1¼	100	30.00	60.00	90.00
470	12	5	5	.85	2	1½	100	40.00	90.00	150.00
470	16	6	5	1.22	2½	2	100	50.00	120.00	185.00
562	8	4	4½	.49	1½	1¼	125	35.00	65.00	100.00
562	12	5	5	.85	2	1½	125	45.00	95.00	155.00
562	16	6	5	1.22	2½	2	125	55.00	125.00	195.00

* Total lift and force from supply to point of delivery, pump not more than 25 feet above water.
† Brass pumps are made entirely of brass, except levers, links and bolts.

Alert Double-Acting Force Pump.



Fig. 747.

The "Alert" Double-Acting Force Pump is similar to the "Challenge," but, instead of the expensive composition valves and valve seats, this Pump has leather valves.

The valves are all grouped together under the air chamber and can be readily exposed to view by unscrewing the bolts at side. Suction and discharge openings are on opposite sides of cylinder.

We always fit suction and discharge for sizes of iron pipe named below, but can fit them for lead pipe or hose, if so ordered, at extra charge for Nos. 2 and 4 of 2.00, and Nos. 6 and 8 of 2.50.

Fig. 747.

No.	Diameter Cylinder. Inches.	Stroke. Inches.	Capacity per Revolution. Gallons.	Suction. Inch Pipe.	Discharge. Inch Pipe.	*Lift and Force. Feet.	Iron. Price.	Brass-Lined. Price.
2	2½	5	.21	1¼	1	75	16.00	18.50
4	3	5	.31	1¼	1	75	18.00	21.00
6	3½	5	.42	1½	1¼	50	20.00	23.50
8	4	5	.54	1½	1¼	50	24.00	28.00

* Total lift and force from supply to point of delivery, pump not more than 25 feet above water.

Anti-Freezing Well Lift Pumps.



Fig. 550.
OPEN TOP.



Fig. 848½.
TIGHT TOP.



Fig. 553.
TOP FOR WINDMILL.

FIG. 550.—Revolving Open Top Anti-Freezing Well Lift Pump, for cisterns and shallow wells, dug, drilled or driven, where water is not more than 25 feet below ground line. Suitable for wells about 28 feet deep, but by lowering cylinder to within 15 feet of water, they can be used in wells 40 to 50 feet in depth. Pump base to bottom of cylinder, 4 feet.

FIG. 848½.—Revolving Tight Top Anti-Freezing Set Length Pump, for service described above. Fitted with polished rod and link. Construction keeps plunger rod in perfect alignment, and prevents all foreign substances getting into working parts of pump. Pump base to bottom of cylinder, 4 feet.

FIG. 553.—Revolving Top Anti-Freezing Well Lift Pump, for service above described. In this style Pump the rod is guided above, and moves up and down in a vertical line without oscillating. It also constitutes a tight top, preventing foreign substances from getting into working parts.

With special long flat rods for windmill, 50 cents extra list.

Figs. 550, 848½ and 553 are tapped, and receive wrought iron connecting pipe near spout, not at base.

Fig.	No.	Cylinder.	Stroke.	Capacity. Gals. per Stroke.	Suction.	Lift.	Iron Cylinder, Each.	Brass Lined Cylinder, Each.
550	3	2¾ x 10	6	.15	1¼	40	8.25	10.75
550	4	3 x 10	6	.18	1¼	30	8.50	11.00
550	6	3½ x 10	6	.25	1½	30	9.50	12.50
848½	3	2¾ x 10	6	.15	1¼	50	9.00	11.50
848½	4	3 x 10	6	.18	1¼	30	9.25	11.75
848½	6	3½ x 10	6	.25	1½	30	10.25	13.25
553	3	2¾ x 10	6	.15	1¼	40	9.25	11.75
553	4	3 x 10	6	.18	1¼	30	9.50	12.00
553	6	3½ x 10	6	.25	1½	30	10.50	13.50



Fig. 1252.
LIFT PUMP.

Well Lift and Force Pumps.



Fig. 1153.
LIFT AND FORCE PUMP.

Figs. 1252 and 1153 illustrate our new Set Length Lift and Force Pumps with adjustable base and brace, syphon spout and revolving bearer top.

The principal feature of these new Pumps is the wrought-iron pipe stock with base and brace, which can be adjusted to meet any requirements of height of lever and spouts. Under the base is a heavy malleable pipe nut, connecting standard with set length. This permits extension of set length with the least possible trouble. When so ordered, we can furnish stock or standard complete without set length, adapting it for any style of lower working cylinder.

Under Fig. 1252 we list Set Length Lift Pump, without stuffing box and hose coupling. Under Fig. 1153 Set Length Force Pump with stuffing box and hose coupling. Base to bottom of cylinder, 4 feet.

Fig.	No.	Cylinder.	Stroke, Inches.	Capacity. Gals. per Stroke.	Suction.	Lift.	Iron, Each.	Brass Lined Cylinder.	Brass Tube Cylinder.
1252	4	3 x 10	5	.15	1¼	25 feet	8.00	10.50	12.50
1153	4	3 x 10	5	.15	1¼	40 " lift and force	11.50	14.00	16.00

No. 1153 is fitted for ¾-inch hose discharge.

Anti-Freezing Well Force Pumps.



Fig. 1244.
BOLTED SPOUT.



Fig. 1245.
COCK SPOUT.



Fig. 1247.
BOLTED SPOUT.



Fig. 1248.
COCK SPOUT.

Figs. 1244 and 1245 represent our Anti-Freezing Force Pumps. This style is especially adapted for garden, yard and stable use, being fitted for hose discharge. All have an outlet at back of spout for attaching pipe.

Fig. 1245 has cock spout.

Figs. 1247 and 1248 illustrate our Anti-Freezing Force Pumps, with Revolving Wind Mill Top. Our construction keeps plunger rod in perfect alignment, thus working in cylinder smoothly and evenly. Fig. 1248 has cock spout. All are fitted with hose discharge. Pumps shown above are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Fig.	No.	Cylinder.	Stroke, Inches.	Capacity, Gals. per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.	Brass Lined Cylinder.
1244	3	2¾ x 10	6	.15	1¼	1¼-in. Pipe and ¾ Hose.	60	12.25	14.75
1244	4	3 x 10	6	.18	1¼		60	12.50	15.00
1244	6	3½ x 10	6	.25	1½		45	13.50	16.50
1245	3	2¾ x 10	6	.15	1¼		60	14.75	17.25
1245	4	3 x 10	6	.18	1¼		60	15.00	17.50
1245	6	3½ x 10	6	.25	1½		45	16.00	19.00
1247	3	2¾ x 10	6	.15	1¼		60	13.25	15.75
1247	4	3 x 10	6	.18	1¼		60	13.50	16.00
1247	6	3½ x 10	6	.25	1½		45	14.50	17.50
1248	3	2¾ x 10	6	.15	1¼		60	15.75	18.25
1248	4	3 x 10	6	.18	1¼		60	16.00	18.50
1248	6	3½ x 10	6	.25	1½		45	17.00	20.00

Heavy Anti-Freezing Lift and Force Pumps.



Fig. 1206.
LIFT PUMP.

Fig. 1206 shows an open-top Well Lift Pump, for deep wells. It has heavy cast-iron stock, fitted with wrought-iron set length and cylinder; set length measures 48 inches from base of Pump to bottom of cylinder.

Fitted in this manner, Pump is adapted for wells of depth not exceeding 25 feet. Where required for deeper wells, cylinder may be lowered. We can supply extra lengths of pipe and rod for wells of any depth.

No. 6 Pump has 1½-inch pipe in set length.

No. 8 Pump has 2-inch pipe in set length.

Fig. 1207 shows our heavy Well Force Pump. General description of Lift Pump, Fig. 1206, will apply to this Pump also.

When so ordered, we can furnish Fig. 1207 with compression cock on spout at 2.50 extra list.



Fig. 1207.
LIFT AND FORCE PUMP.

Fig.	No.	Cylinder.	Stroke. Inches.	Capacity, Gals. per Stroke.	Suction. Inches.	Lift, Feet.	Iron Cylinder.	Brass Lined Cylinder.
1206	6	3½ x 10	6	.25	1½	25	12.00	15.00
1206	8	4 x 10	6	.32	2	25	14.00	17.50

Fig.	No.	Cylinder.	Stroke. Inches.	Capacity, Gals. per Stroke.	Suction. Inches.	Discharge Hose.	*Lift and Force, Feet.	Iron Cylinder.	Cylinder, Brass Lined.
1207	6	3½ x 10	6	.25	1½	1	45	18.00	21.00
1207	8	4 x 10	6	.32	2	1	30	20.00	23.50

*Depth of wells to which Pumps may be adapted by lowering cylinders to within 15 or 20 feet of water or total lift and force from supply to point of delivery.

"Empire" Double-Acting Well Force Pumps.

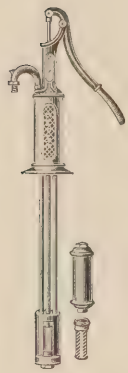


Fig. 1025.

Fig. 1025 illustrates our "Empire" Double-Acting Well Force Pump, with common top, as adapted for shallow or deep wells. Pump consists of a standard, with bearer top in one piece, cast in two half sections, strongly bolted and holding securely in place the two supporting pipes which form respectively the air chamber and discharge pipes, connecting with upper cylinder. This upper cylinder is brass-lined and has differential plunger, contributing to an even and uniform discharge of water. We dispense with all stuffing boxes or glands, avoid all undue friction, and secure the easiest possible working pump. Pump is furnished complete, with brass-lined or brass-body lower cylinder, with "Universal" Bronze Valve and Seat, and universal bushing for either shallow or deep wells. No. 2 Pump will go inside 4-inch well casing; No. 4 Pump inside 5-inch well casing.

Fig. 1026 is similar to Fig. 1025, but has wind mill top.



Fig. 1026.

	No.	Lower Cylinder. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Discharge. Inch Hose.	Well Rod. Inches.	*Lift and Force. Feet.	Brass-Lined Cylinder. Price.	Brass-Body Cylinder. Price.
Fig. 1025.	2	2½ x 10½	6	.13	1¼	¾	⅜	100	14.00	15.00
" 1025.	4	3 x 10½	6	.18	1¼	¾	⅜	75	14.50	15.50
" 1026.	2	2½ x 10½	6	.13	1¼	¾	⅜	100	15.00	16.00
" 1026.	4	3 x 10½	6	.18	1¼	¾	⅜	75	15.50	16.50

* Depth of Wells to which Pumps may be adapted by lowering Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

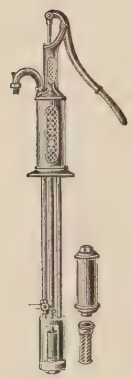


Fig. 1027.

Fig. 1027 represents our "Empire" Double-Acting Well Force Pump, with common top, Brass three-way cock and connecting rod, for shallow or deep wells. The addition of three-way cock and connecting rod for distributing water to any part of premises, house, barns, etc., will increase the usefulness of this Pump for many purposes.

Fig. 1028 is similar to Fig. 1027, but has wind mill top.

Unless otherwise ordered, we ship all "Empire" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the universal bushing for bottom of upper cylinder and top attachment for lower cylinder tied on. Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach universal bushing to bottom of upper cylinder and top cap to lower cylinder, and connect with pipe and rod required for any depth of well. Universal bushing, adapting Pumps for shallow or deep wells, strainer and hose connection go with each Pump and are included in prices given below.



Fig. 1028.

	No.	Lower Cylinder. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Lower Discharge. Inch Pipe.	Upper Discharge. Inch Hose.	*Lift and Force. Feet.	Brass-Lined Cylinder. Price.	Brass-Body Cylinder. Price.
Fig. 1027.	2	2½ x 10½	6	.13	1¼	1	¾	100	16.50	17.50
" 1027.	4	3 x 10½	6	.18	1¼	1	¾	75	17.00	18.00
" 1028.	2	2½ x 10½	6	.13	1¼	1	¾	100	17.50	18.50
" 1028.	4	3 x 10½	6	.18	1¼	1	¾	75	18.00	19.00

* Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Well Lift Pump Standards.



Fig. 846.
No. 3.
LIFT PUMP STANDARD.

FIG. 846.—Well Pump Standard, fitted with revolving bowl top and solid base. This style is a great favorite with well drillers.

FIG. 762.—Well Pump Standard with wind mill top. Tapped for pipe near spout, have supporting brace, and are a desirable standard in every way. Made in 3 sizes. We can fit the 6-inch or 10-inch stroke pumps for 1¼, 1½ or 2-inch pipe (No. 5 Standard can be tapped 2½ inch), but always fit as below unless otherwise directed. Pumps tapped for 2-inch pipe have couplings for 1-inch wood rod. Wind mill slides are not sent unless ordered.



Fig. 762.
LIFT PUMP STANDARD, WIND MILL AND HAND.

Fig. 846.

No.	Stroke. Inches.	Suction. Inches.	Well Rod. Inches.	*Lift.	Price.
3	6	1¼	⅝	2¾ inch cylinder, 40 feet	5.00
4	6	1¼	⅝	3 " " 40 "	5.50
5	6	1¼	⅝	3½ " " 40 "	6.00

Fig. 762.

Stroke. Inches.	Suction Inches.	Well Rod.	*Lift.	No. 3. Price.	No. 4. Price.	No. 5. Price.
6	1¼	$\frac{7}{16}$ inch	2½ inch cylinder, 100 feet	7.00	7.50	8.00
10	2	$\frac{7}{16}$ and 1 inch	3 " " 60 "	8.00	8.50	9.00

Well Force Pump Standards.



Fig. 853.
No. 1.
FORCE PUMP STANDARD.

FIG. 853.—Well Force Pump Standard arranged with tight top, polished rod and links above. In this Standard the air chamber is made by enlarging stock at top. This Standard is tapped for pipe near the spout. Each one has an outlet back of the spout for attaching pipe, and the spout is provided with hose tube and nut to screw on.

Tapped as below unless otherwise ordered.

FIG. 855.—Force Pump Standard with air chamber on spout, tight top and polished rod and links above. Simple in construction, strong and compact, and offers good value for a pump of this class at the low price at which it is offered. Tapped near spout as below, but can be changed if desired.

Cock spouts **2.50**, extra list.



Fig. 855.
FORCE PUMP STANDARD.

Fig.	No.	Stroke. Inches.	Suction. Inches.	Discharge.	Well Rod. Inches.	*Lift and Force.	Price.
853.	0	6	1¼	1¼ inch pipe and ¾ inch hose	$\frac{7}{16}$	2½ inch cylinder, 60 feet	8.50
853.	1	6	1¼	1¼ " " " ¾ " "	$\frac{7}{16}$	2¾ " " 50 "	9.00
853.	2	6	1¼	1¼ " " " ¾ " "	$\frac{7}{16}$	3 " " 40 "	10.00
855.	--	6	1¼	1¼ " " " ¾ " "	$\frac{7}{16}$	{ 2½ " " 60 " / 3 " " 45 " }	11.00

Cylinders like Figs. 1230 and 1231 are required with these Pump Standards and cost extra.

* Depth of wells to which Pump Standards may be adapted by placing cylinders within 15 or 20 feet of water; smaller cylinders in proportionately deeper wells.

Pitcher and Round Spout Pumps.

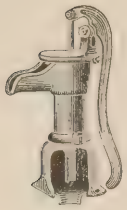


Fig. 208.

FIG. 208.—Pitcher-Spout Pump with closed revolving bearer top is similar to Fig. 205½, but in addition it has an improvement in the form of a patent vacuum base. Oftentimes in driven wells, where the soil is so close as to make an air-tight joint around the pipe, an ordinary Pump will not work well; while with the Vacuum Base Pump all difficulty is obviated, for by creating a vacuum in the base and permitting the water to form there a reservoir, a constant supply of water is obtained for the Pump. We fit them always for wrought-iron pipe, with the thread cut in the hub of the base.



Fig. 209.

Round-Spout Pitcher Pump.

Fig. 209 shows our new style Pitcher Pump, with a round spout. This construction prevents water from slopping over spout, and also provides means of hanging bucket upon the spout. This Pump is made like our other Pitcher Pumps, with revolving brake, bolt fastenings and cut-off base.

Fitted for wrought-iron pipe unless otherwise ordered.

To prevent freezing, raise lever to extreme height, thus allowing water to leave cylinder.

Figs. 208 and 209.

	No.	Dia. Cyl. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Lift. Feet.	Iron. Price.	*Brass-Lined. Price.	*Porcelain-Lined. Price.
Fig. 208	1	2½	4	.09	1	25	4.75	7.00	7.00
" 208	2	3	4	.12	1¼	25	5.25	7.75	7.75
" 208	3	3½	4	.17	1¼	25	5.75	8.50	8.50
" 209	1	2½	4	.09	1	25	4.25	6.50	6.50
" 209	2	3	4	.12	1¼	25	4.75	7.25	7.25
" 209	3	3½	4	.17	1¼	25	5.25	8.00	8.00

*Brass-lined and Porcelain-lined Pumps have galvanized plungers and rods.

Lift Pump for Out-Door Use.



Fig. 607.
LIFT PUMP.

FIG. 607.—We have frequent calls for a Suction and Lift Pump taller and heavier than our largest Cistern and Pitcher Pumps, and offer Fig. 607, which we build about 41 inches high.

It is provided with revolving bearer top and has a long heavy lever. The Pump stock acts as a cylinder, in which is the plunger, and can be emptied of water by raising the lever, thus tripping valve seated on the base. A strong brace gives rigidity to the Pump.

Fig. 607.

No.	Dia. Cyl. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Well Rod. Inch.	Lift. Feet.	Iron.
4	3	6	.18	1¼	7/16	25	8.50
5	3¼	6	.22	1½	7/16	25	9.00



Fig. 608.
FORCE PUMP.

Force Pump for Out-Door Use.

FIG. 608.—This Pump is about 50 inches high, has revolving brake or fulcrum, a strong, heavy lever, and is in every way calculated to render good service. A thread is cut on the end of the spout, and with each Pump is sent a half hose coupling and nut for attaching hose.

The plunger works in the stock of Pump, which can be emptied of water by raising the lever, thus tripping the valve in the base.

When ordered with cock spout we add 2.50 to list price.

Fig. 608.

No.	Dia. Cyl. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Well Rod. Inch.	Discharge Fitted for Hose.	*Lift and Force. Feet.	Iron.
4	3	6	.18	1¼	7/16	1	50	13.00
5	3¼	6	.22	1½	7/16	1	50	14.00
6	3½	6	.25	1½	7/16	1	40	15.00

These Pumps are especially adapted for use in warm climates.

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

Cistern Suction Pumps.



Fig. 199.
BOLTED BASE.



Fig. 200.
BOLTED BASE.

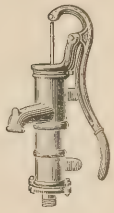


Fig. 202½.
WITH BRACKETS.

Fig. 199 is a popular style of Cistern Pump. The lever can be turned to any convenient position. The valve seat is formed by brass tube and flange, and the end of tube threaded to take wrought-iron pipe coupling if gas pipe is used, or cast-iron nut with brass tube is supplied, if lead pipe is used. Will fit for lead or iron pipe as ordered.

To prevent freezing, trip the lower valve by raising lever to extreme height. Brass cylinder pumps have brass plungers.

Fig. 200 with broad bearing revolving top and high base.

A substantial hub on the under side of the base has threads on it for coupling on an iron nut with gas-pipe threads cut in it for connecting iron pipe. Soldering tube is fitted in this nut when connection to lead pipe is desired. To prevent freezing, raise lever to extreme height.

Fig. 202½ represents our new style Revolving Top Cistern Pump with brackets. This is in many instances a more convenient form than a pump on base. It can be secured to the wall in any place desired. Has a brass valve seat with tube threaded to take iron pipe coupling, or nut with soldering tube, if lead pipe is used.

Figs. 199, 200, 202½.

No.	Dia. Cyl. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Lift. Feet.	Iron. Price.	Brass-Lined. Price.	*Brass Cylinder. Price
0	2	5	.07	1	25	3.50	5.50	5.50
1	2¼	6	.10	1	25	4.00	6.00	6.00
2	2½	6	.13	1¼	25	4.50	6.50	7.00
3	2¾	6	.15	1¼	25	5.00	7.25	8.00
4	3	6	.18	1¼	25	5.50	8.00	10.00
5	3¼	6	.22	1½	25	6.50	9.50	13.00
6	3½	6	.25	1½	25	8.00	11.50	18.00
8	4	6	.33	2	25	10.00	15.00	25.00

NOTE.—Fig. 202½ not made in No. 8 size.

Pitcher Spout Pumps.

Revolving Bearer Top and Bolted Base.

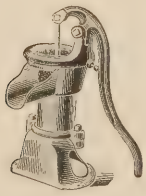


Fig. 205.
OPEN TOP.

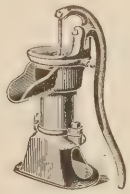


Fig. 205½.
CLOSED TOP.

Fig. 205 shows our standard Open Top Pitcher Spout Pump, so generally and favorably known throughout the world. Wherever a cheap but substantial Pump for use in house or over drive-well is required this Pump (or Fig. 205½, Closed Top) is a favorite. It has revolving bearer top. By lifting lever to extreme height valve is tripped, to prevent freezing. A suction nut, tapped to receive wrought-iron pipe, is furnished on the hub underneath base. Through this is introduced a soldering tube for lead pipe connection.

Figs. 205 and 205½.

No.	Dia. Cyl. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Suction. Inches.	Lift. Feet.	Iron. Price.	*Brass-Lined. Price.	*Porcelain-Lined. Price.
1	2½	4	.09	1	25	4.25	6.50	6.50
2	3	4	.12	1¼	25	4.75	7.25	7.25
3	3½	4	.17	1¼	25	5.25	8.00	8.00
4	4	4	.22	1½	25	6.25	9.00	9.00
5	4½	5	.34	1½	25	9.50	12.50	12.50
6	5	5	.43	2½	25	17.00	22.00	22.00

*Brass-Lined and Porcelain-Lined Pumps are furnished with galvanized plungers and rods.

Figs. 1230 and 1231. Pump Cylinders.



Fig. 1230. OUTSIDE ATTACHMENT.



Fig. 1231. INSIDE ATTACHMENT

Diameter and Length.	Fig. 1230. Capacity per Stroke. Stroke. Inches.	Capacity per Stroke. Gallons.	Fig. 1231. Stroke. Inches.	Size Pipe. Inches.	Well Rod. Inches.	Iron.	Brass Lined. Brass Cage and Valve Plunger.	Brass Body. All Brass Plunger.	All Brass.
2 x 10½	6	.08	6	1	⅜	3.75	7.50	8.00	10.75
2¼ x 10½	6	.10	6	1	⅜	4.00	7.75	8.25	11.00
2½ x 10½	6	.13	6	1¼	⅜	4.35	8.00	8.50	12.25
2¾ x 10½	6	.15	6	1¼	⅜	4.70	8.50	9.00	12.75
3 x 10½	6	.18	6	1¼	⅜	5.00	9.00	9.75	13.50
3¼ x 10½	6	.21	6	1½	⅜	6.00	9.75	10.50	14.75
3½ x 10½	6	.25	6	1½	⅞	7.00	10.50	11.50	16.75
4 x 10½	6	.32	6	2	⅞	9.00	13.00	15.50	21.50
2 x 12	8	.11	6	1	⅜	5.50	8.00	9.25	11.25
2¼ x 12	8	.14	6	1	⅜	5.75	8.25	9.50	11.50
2½ x 12	8	.17	6	1¼	⅜	6.00	8.50	9 75	12.75
2¾ x 12	8	.20	6	1¼	⅜	6.50	9.00	10.50	13.25
3 x 12	8	.24	6	1¼	⅜	7.00	9.50	11.00	14.00
3¼ x 12	8	.29	6	1½	⅜	8.00	10.25	12.00	15.25
3½ x 12	8	.33	6	1½	⅞	9.00	11.25	13.75	17.50
4 x 12	8	.44	6	2	⅞	11.50	14.25	18.00	22.50
2 x 14	10	.14	8	1	⅜	6.00	8.50	9.75	13.00
2¼ x 14	10	.17	8	1	⅜	6.25	9.00	10.25	13.50
2½ x 14	10	.21	8	1¼	⅜	6.50	9.25	10.50	14.75
2¾ x 14	10	.25	8	1¼	⅜	7.00	9.75	11.25	15.50
3 x 14	10	.30	8	1¼	⅜	7.50	10.25	11.75	16.25
3¼ x 14	10	.36	8	1½	⅜	8.75	11.00	12.75	17.75
3½ x 14	10	.41	8	1½	⅞	10.00	12.25	14.75	21.00
4 x 14	10	.54	8	2	⅞	13.00	15.75	19.00	26.50
4½ x 14	8	.55	6	2	½	17.50	24.00	28.00	36.00
5 x 14	8	.68	6	2½	½	22.50	33.00	38.00	50.00

Fig. 548. Cylinder with Air Chamber.

Size. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Fitted for Pipe. Inches.	Well Rod. Inches.	Iron.	Brass Body.
2¾ x 16	9	.23	1¼	⅞	11.00	20.00
3 x 16	9	.27	1¼	⅞	11.50	20.75
3½ x 16	9	.37	1½	⅞	12.50	25.75
4 x 16	9	.49	2	½	14.00	30.00

All Brass Air Chamber furnished when so ordered at extra charge.



Fig. 548. WITH AIR CHAMBER.

Fig. 904. Brass Artesian Deep Well Cylinder.

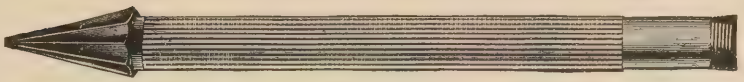
Inside Diameter. Inches.	Stroke. Inches.	Capacity per Stroke. Gallons.	Usual Speed and Capacity per Minute. Revs.	Gals.	Dimensions. Length Pump Chamber. Inches.	Maximum Outside Diameter Caps. Inches.	Top and Bottom Connecting Pipes. Inches.	Square Wood Sucker Rod. Inches.	All Brass.
3¼	10	.359	35	12.50	30	4½	3½	2	45.00
3¼	14	.503	30	15.	34	4½	3½	2	48.00
3¼	16	.574	30	17.22	36	4½	3½	2	48.00
3¼	24	.862	25	21.55	44	4½	3½	2	52.00
3¼	30	1.077	20	21.54	50	4½	3½	2	55.00
3¼	36	1.29	20	25.80	56	4½	3½	2	58.00
3¾	10	.478	35	16.73	34	5⅛	4	2¼	67.50
3¾	14	.669	30	20.	38	5⅛	4	2¼	70.00
3¾	16	.764	30	22.92	40	5⅛	4	2¼	70.00
3¾	24	1.14	25	28.50	48	5⅛	4	2¼	75.00
3¾	30	1.43	20	28.86	54	5⅛	4	2¼	80.00
3¾	36	1.721	20	34.42	60	5⅛	4	2¼	85.00
4¼	10	.614	35	21.49	34	5¾	4½	2½	87.50
4¼	14	.859	30	25.7	38	5¾	4½	2½	90.00
4¼	16	.982	30	29.46	40	5¾	4½	2½	90.00
4¼	24	1.47	25	36.75	48	5¾	4½	2½	95.00
4¼	30	1.84	20	36.80	54	5¾	4½	2½	100.00
4¼	36	2.211	20	44.20	60	5¾	4½	2½	105.00
4¾	10	.767	35	26.84	34	6¼	5	3	120.00
4¾	14	1.07	30	32.1	38	6¼	5	3	127.50
4¾	16	1.22	30	36.81	40	6¼	5	3	127.50
4¾	24	1.84	25	46.02	48	6¼	5	3	135.00
4¾	30	2.30	20	46.	54	6¼	5	3	142.50
4¾	36	2.76	20	55.20	60	6¼	5	3	150.00
5¾	10	1.12	35	39.20	34	7¼	6	3½	172.50
5¾	14	1.57	30	47.1	38	7¼	6	3½	180.00
5¾	16	1.78	30	53.70	40	7¼	6	3½	180.00
5¾	24	2.69	25	67.25	48	7¼	6	3½	195.00
5¾	30	3.372	20	67.44	54	7¼	6	3½	207.50
5¾	36	4.014	20	80.80	60	7¼	6	3½	217.50
6¾	16	2.479	30	74.37	40	8¼	7	4	280.00
6¾	24	3.716	25	92.9	48	8¼	7	4	300.00

Larger sizes to 11½ inside diameter furnished or quoted on application.



Fig. 904. ARTESIAN DEEPWELL CYLINDER

Drive Well Points.



BRASS JACKET DRIVE WELL POINT.

Trade No.	Size in Diameter.	Length of Point. Inches.	Length of Jacket. Inches.	No. of Holes.	Number of Gauze 60. Per Dozen.	Number of Gauze 70. Per Dozen.	Number of Gauze 80. Per Dozen	Number of Gauze 90. Per Dozen.	Number of Gauze 100. Per Dozen.
78	1	36	30	120	51.00	59.00	66.00	76.00	94.00
82	1	48	42	168	69.00	78.00	86.00	100.00	136.00
86	1¼	20	14	80	30.00	36.00	42.00	50.00	64.00
90	1¼	24	18	100	36.00	44.00	52.00	60.00	80.00
94	1¼	30	24	130	46.00	55.00	64.00	75.00	100.00
98	1¼	36	30	165	56.00	66.00	76.00	90.00	120.00
100	1¼	42	36	200	66.00	77.00	88.00	105.00	140.00
102	1¼	48	42	270	76.00	88.00	100.00	120.00	160.00
106	1¼	54	48	260	86.00	99.00	112.00	135.00	180.00
110	1¼	60	54	290	96.00	110.00	124.00	150.00	200.00
112	1¼	66	60	320	106.00	121.00	136.00	165.00	220.00
114	1¼	72	66	350	116.00	132.00	148.00	180.00	240.00
136	1½	24	18	120	48.00	57.00	65.00	78.00	94.00
140	1½	30	24	162	60.00	70.00	80.00	96.00	118.00
144	1½	36	30	198	72.00	84.00	95.00	114.00	142.00
164	2	30	24	208	90.00	101.00	112.00	132.00	160.00
168	2	36	30	264	105.00	118.00	130.00	154.00	190.00
172	2	48	42	336	135.00	151.00	166.00	198.00	250.00
188	2½	48	42	360	230.00	265.00	300.00	340.00	400.00
192	2½	60	54	420	280.00	325.00	370.00	420.00	500.00
200	3	36	30	300	240.00	275.00	310.00	340.00	410.00
216	4	48	36	360	480.00	520.00	560.00	600.00	700.00
220	4	72	60	600	630.00	695.00	760.00	840.00	1000.00

Washer Drive Well Points.



WASHER POINT.

Same list prices as above.

These points are made of Galvanized Iron Pipe, bored and countersunk. Each hole is covered with gauze, held in its place by a brass washer expanded to fill the hole.

Well Points for Water Works.

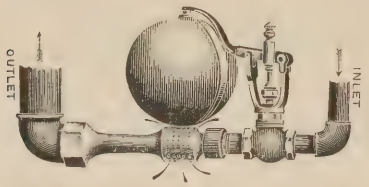


WATER WORKS POINT.

These prices are for Points, open end, or with plugs, as ordered, and are covered with the different mesh gauzes indicated, also with brass jacket.

Diameter Pipe, Black or Galvanized. Inch.	No. 60 Gauze. Per Foot.	No. 70 Gauze. Per Foot.	No. 80 Gauze. Per Foot.	No. 90 Gauze. Per Foot.	No. 100 Gauze. Per Foot.
5	5.00	5.75	6.50	7.25	8.00
6	5.80	6.50	7.25	8.00	9.00
7	7.00	7.75	8.50	9.25	10.50
8	8.50	9.25	10.00	11.00	12.00
10	13.00	14.00	15.25	16.50	18.00

The Nason Cellar Drainers.



Style B.
CELLAR DRAINER.

In connecting this Drainer care should be used in blowing out the supply pipes, to avoid possibility of lodgment of scale in front of the jet.

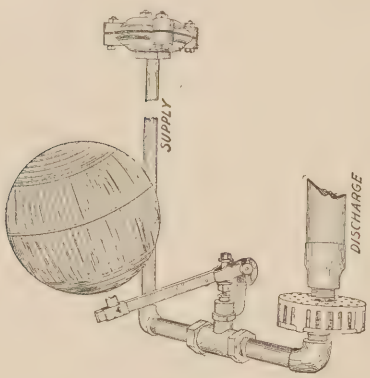
From the extreme point of lift the discharge line should have all the fall it is possible to give it to insure greatest efficiency and economy.

Style B. Cellar Drainers.

No.	1	2	3
Gallons' Capacity per hour	375	600	1275
Size Water Pressure or Supply Pipe	½	¾	1
Size Discharge Pipe	1	1½	2
Weight	6½	8	11
Extreme Lift, feet	12	12	12
Length of Drainer, inches	14	18	21
Height "	11	11	11
Each	24.00	34.00	40.00

NOTE.—The lift and capacity are based on a water pressure of 5 lbs. to every 1 foot of height the surface or dead water is elevated.

Style C. Cellar Drainers.



Style C.
DRAINER WITH AUTOMATIC MOVEMENT.

This Drainer will operate with pressure of 15 lbs. or more, the heavier the pressure the greater the amount of dead water discharged; but the minimum pressure is sufficient to lift from an ordinary cellar about six feet deep.

Instructions for Connecting Drainer.

To place the Drainer, sink a barrel or box about 18 inches by 18 inches by 30 inches deep in the lowest part of place to be drained. Previous to sinking barrel, bore in the sides a number of augur holes not more than one-half inch in diameter, but put none in the bottom. A supply pipe should then be run from the water service or steam pipe, already in building, directly as possible, and connected to Drainer at large galvanized iron strainer bowl. Use no lead on the threads of the supply pipe when making connections, and in all cases flush this pipe well before connecting it to Drainer, so that any rust and scale which might be in pipe will be removed. To reducer attach the discharge pipe, which should be run to such point as is desired. Where bends are necessary, bend the discharge pipe gently and evenly, so as to cause as little friction as possible. The float ball rod must be adjusted to suit the pressure; the heavier the pressure the greater the leverage necessary.



Style C.
WITHOUT AUTOMATIC MOVEMENT.

The Drainer without automatic movement we do not recommend for cellar or any place where water comes unexpectedly and irregularly, and at such times as some one about the premises cannot always be cognizant that attention to Drainer is necessary and give it promptly. For contractors and builders this Drainer will prove a very economical means for keeping foundations free from water.

Style C. Drainers.

No.	Pressure, Lbs.	Lift, Feet.	Capacity per hour, Gallons.	Size Supply Pipe.	Size Discharge Pipe.	With Automatic Movement.	Without Automatic Movement.
1	15 to 80	6 to 12	50 to 250	½	1	25.00	15.00
2	15 to 80	6 to 12	100 to 400	¾	1¼	40.00	25.00
3	15 to 80	6 to 12	150 to 600	1	1½	55.00	35.00
4	15 to 80	6 to 12	200 to 800	1¼	2	80.00	50.00
5	15 to 80	6 to 12	275 to 1000	1½	2½	110.00	70.00
6	15 to 80	6 to 12	350 to 1200	2	3	160.00	100.00

Compression Fire Hydrant.



COMPRESSION FIRE HYDRANT.

This hydrant is so constructed that in case of obstruction in the valve, or for necessary repairs, the valve, valve seat and drip valve may all be easily drawn out of the top of the hydrant, leaving the stand pipe undisturbed, and replaced in a few moments, thus obviating the necessity of digging up the street or disconnecting the stand pipe from the water main.

A very important feature of this hydrant is the ease with which the valve seat and valve may be removed, and as this is the part of the hydrant which is, more than all others, subject to hard usage, it is essential that it be accessible. Therefore, should the valve or seat become marred, or in any way cut up, it may be easily taken out, repaired, and quickly returned to its place, when the hydrant will be as good as new.

The drip valve is positive, being attached to main stem, for, when the main valve opens the drip closes, and when the main valve closes the drip opens ready to drain the water from the stand pipe, thus preventing all danger of freezing.

The valve seat, stem, stem nut and drip valve are made of gun metal.

The main valve is made of best hydraulic leather, and may always be relied upon to make a perfectly tight joint.

The above are important features not found in any other hydrant. First-class workmanship and material only are used in the construction of these hydrants, and each one undergoes a severe hydraulic test before leaving our works.

All the parts are interchangeable. This Fire Hydrant being entirely drained by a perfect drip valve, the Frost Case is an unnecessary expense, and is not furnished with hydrant except when specially ordered.

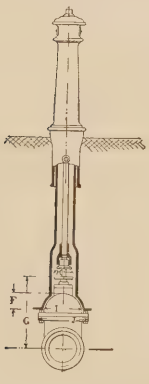


SECTION.

Compression Fire Hydrant, with or without Frost Case.

Diameter of Pipe Connection. Inches.	Diameter of Stand Pipe. Inches.	Valve Opening. Inches.	Number and Size of Nozz.es.	Length from Pavement to Bottom of Connection, 5 ft.	Deduct for each 6 ins. less than 5 ft. bury.	Each 2½-in. Nozzle Additional.	Each Steamer Nozzle Additional.	Frost Case Additional.
3 or 4	5	3	One 2½-inch	28.00	.60	2.00	3.50	4.50
4 or 6	6	4	Two 2½-inch	34.50	.75	2.00	3.50	5.00
4 or 6	6	4	One Steamer or two 2½-inch	34.50	.75	2.00	3.50	5.00
4 or 6	7	5	One Steamer or two 2½-inch	40.50	.85	2.00	3.50	6.50
4 or 6	7	5	One Steamer and one 2½-inch	42.50	.85	2.00	3.50	6.50
6	9	6	One Steamer and two 2½-inch	54.00	1.00	2.00	3.50	7.50

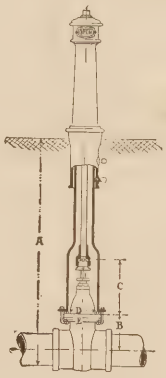
Indicator Posts for Automatic Sprinkler Systems.



END SECTION.
Showing Connection to Valve.



ENLARGED SECTION
Of Post Showing Top Detail.



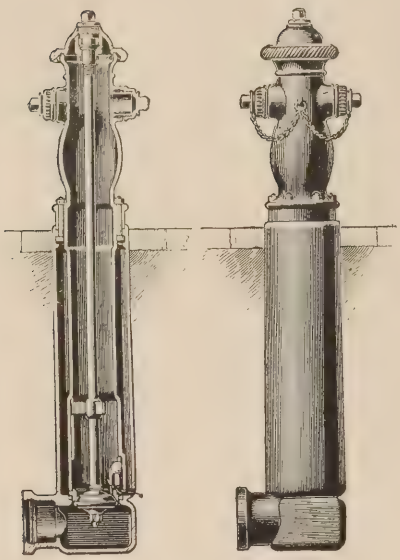
SIDE SECTION.
Showing Connection to Valve.

This post is guaranteed weatherproof. It is adjustable and is approved by the Underwriters.

Price, of Post only 40.00

To obtain price of post and valve complete, add to price of Post the price of such size and style of valve as may be required.

The "Glamorgan" Compression Fire Hydrant.



SECTION. FULL VIEW.

Designed to meet the demand for a Hydrant commending itself for its simplicity, durability and easy access of working parts.

The illustrations show the general outward appearance of Hydrant, also its internal arrangement.

The main valve is of the form generally used in this type of Hydrant, and is made either of leather or rubber, as preferred.

The waste valve is of solid brass, positive in action, and is operated directly from the main valve, being closed by the first and opened by the last turn of the wrench in opening or closing main valve. Water is admitted to the waste valve chamber through six ¼-inch holes, any one of which would drain the Hydrant if five were clogged. These holes act as a strainer, and any impediment which can pass one of them can easily pass through the valve, thus avoiding any possibility of the waste becoming clogged. It drains close down to the main valve, leaving practically no water in stand pipe.

The stand pipe is secured in outer case by six bolts, at the pavement level, and a water-tight joint is made below the main valve seat by a rubber gasket fitting in seat cast in bottom of outer case. To remove same it is only necessary to loosen nuts of bolts at pavement level and turn the stand pipe slightly, until the bolt heads come in the slots cast in the inward projecting flange at top of outer case, and being thus free it can be lifted to the surface of the ground. By slacking back the main valve nut on top of Hydrant, the valve, valve seat, waste valve and seat can be readily examined and repaired if necessary.

The nozzles can be adjusted to face in any direction desired by loosening nuts at pavement level and turning the stand pipe.

The outer case is tapered from bottom to top, thus rendering it free from danger of being lifted by the action of frost in heaving the ground.

The "Glamorgan" Hydrants.

Standard Dimensions.	Length from Pavement to Bottom of Connecting Pipe, 5 ft.	Each 6 in. difference in length from 5 ft. add or deduct.	Each 2½ in. Nozzle additional.	Each Steamer Nozzle additional.
3-INCH. Stand Pipe, 4 inches Diameter, Valve Opening, 3¼ inches Diameter, One 2½-inch Hose Nozzle.	27.50	.75	2.75	4.00
4-INCH. Stand Pipe, 5 inches Diameter, Valve Opening, 4¼ inches Diameter, Two 2½-inch Hose Nozzles.	32.00	1.00	2.75	4.00
5-INCH. Stand Pipe, 6 inches Diameter, Valve Opening, 5¼ inches Diameter, Two 2½-inch Hose and One Steamer Nozzle.	38.50	1.40	2.75	4.00
6-INCH. Stand Pipe, 7 inches Diameter, Valves Opening, 6⅛ inches Diameter, Two 2½-inch Hose and One Steamer Nozzle.	43.50	1.80	2.75	4.00

Secondary Gates for Hydrants.

3-inch	Connection, with	3-inch	Valve, bolted on	9.75
4	"	4	"	13.25
5	"	5	"	15.75
6	"	6	"	19.00

Please give the following particulars when ordering:

1. Length from surface of ground to bottom of connecting pipe.
2. Size of connecting pipe. Unless flange or screwed connection is specified we furnish bell or hub connection in all cases.
3. Number and size of nozzles.
4. Whether to open by turning to the left or to the right.

We prefer having nozzle cap sent by customers to whom we have not heretofore sold Hydrants, so that we may be able to get exact size of thread and nut.

The Lewis Patent Compression Hydrants.



Fig. 666.

Fig. 666. With Stop Valve. Screwed for ¾-inch Iron Pipe.

In Ground, feet	2	2½	3	3½	4	4½	5	6
¾-inch Hose, each	9.00	9.75	10.00	10.75	11.00	11.75	12.00	13.00
1 "	11.50	12.25	12.50	13.25	13.50	14.25	14.50	15.50

Fig. 665. With Stop Valve for Lead Pipe.

Can also be connected to Iron Pipe by taking off Coupling.

In Ground, feet	2	2½	3	3½	4	4½	5	6
¾-inch Hose, each	9.00	9.75	10.00	10.75	11.00	11.75	12.00	13.00

The Lewis Patent Self-Closing Hydrants.



Fig. 668.

Fig. 668. With Stop Valve. Screwed for ¾-inch Iron Pipe.

In Ground, feet	2	2½	3	3½	4	4½	5	6
¾-inch Hose, each	10.00	10.75	11.00	11.75	12.00	12.75	13.00	14.00

Fig. 667. With Stop Valve for Lead Pipe.

Can also be connected to Iron Pipe by taking off Coupling.

In Ground, feet	2	2½	3	3½	4	4½	5	6
¾-inch Hose, each	10.00	10.75	11.00	11.75	12.00	12.75	13.00	14.00



Fig. 646.
STAR HYDRANT.

Stop Cock Boxes and Street Washers.

Figs. 646 and 647.

They are perfectly anti-freezing; almost instantly opened or closed by means of the double-threaded brass screw, actuating the valve below. They can be repaired from the top without digging up.

They have a brass swivel or coupling nut, and the brass tube for service pipe connection is ground to a joint with the valve case elbow. It would always be well to have a short piece of lead pipe between the coupling and service pipe, as its flexibility will prevent a fracture of the pipe when the frost heaves the ground, and in clay soil to make some provision for drainage of waste water. We measure from ground line to center of service pipe inlet.

Our ¾-inch hydrants and washers have inlet fitted for both iron and lead pipe—¾-inch. Spout fitted for ¾-inch hose coupling. Our 1-inch hydrant and washers have 1-inch inlet and outlet. An iron turnkey goes with each Street Washer. Extra keys, 20 cents.



Fig. 647.
STAR STREET WASHER.

Length to set in the Ground. Inches.	Fig. 646. ¾-Inch. Inlet fitted for ¾-in. Iron and Lead Pipe. Spout for ¾-in. Hose. Price.	Fig. 646. 1-Inch. Inlet Fitted for 1-in. Iron and Lead Pipe. Spout for 1-in. Hose. Price.	Fig. 647. ¾-Inch. Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout for ¾-in. Hose. Price.	Fig. 647. 1-Inch. Inlet Fitted for 1-in. Iron and Lead Pipe. Spout for 1-inch Hose. Price.
18	9.00	11.50	7.50	9.00
24	9.00	11.50	7.50	9.00
30	10.00	12.50	8.50	10.00
36	10.00	12.50	8.50	10.00
42	11.00	13.50	9.50	11.00
48	11.00	13.50	9.50	11.00
54	12.00	14.50	10.50	12.00
60	12.00	14.50	10.50	12.00
72	13.00	15.50	11.50	13.00



STREET WASHER ROD.

Street Washer Rod.

Each ..... .50

Hydrant Rod, each ..... .75

Roadway and House Service Boxes for Gas or Water Mains.



Fig. 261.
SQUARE HEAD
ROADWAY BOX.
With Flange Base.



Fig. 259.
ROADWAY
EXTENSION PIECE.



Fig. 262.
SQUARE HEAD
ROADWAY BOX.
With Open Base.

Square Head Roadway Boxes.

Diameter of Shaft, 4¼ inches.

No.		Extension.	Each.	No.		Extension.	Each.
120	Fig. 261	12 inches long	1.65	137	Fig. 262	12 inches long	1.65
121	"	16 " "	1.75	138	"	16 " "	1.75
122	"	1 ft. 6 in. to 2 ft	1.85	140U	"	1 ft. 6 in. to 2 ft. 1 in	1.85
123	"	1 " 9 " 2 ft. 7 in	1.95	141S	"	1 " 9 " 2 " 7 "	1.95
124	"	2 " 3 " 3 "	2.10	142S	"	2 " 1 " 2 " 11 "	2.10
125	"	2 " 5 " 3 " 6 in	2.20	142T	"	2 " 5 " 3 " 6 "	2.20

Can be furnished in longer lengths than measurements given when desired.

Roadway Extension Piece, Fig. 259.

Number 49, Fig. 259, for 4¼-inch Roadway Boxes, increasing length 18 inches, each ..... .60

Round Head Roadway Boxes.

Diameter of Shaft, 4¼ inches,

No.	Fig.	Flange Base Extension.	Each.	No.	Fig.	Open Base Extension.	Each.
41Q	258	1 ft. 6 in. to 2 ft	1.85	141Q	260	1 ft. 6 in. to 2 ft	1.85
42Q	258	2 " 3 " 2 " 10 in	2.00	142Q	260	2 " 3 " 2 " 10 in	2.00
42R	258	2 " 3 " 3 " 6 "	2.20	142R	260	2 " 3 " 3 " 6 "	2.20
43R	258	2 " 10 " 4 "	2.30	143R	260	2 " 10 " 4 "	2.30
44R	258	3 " 3 " 4 " 6 in	2.40	144R	260	3 " 3 " 4 " 6 in	2.40
45R	258	3 " 10 " 5 "	2.50	145R	260	3 " 10 " 5 "	2.50

Similar in design and construction to Figs. 261 and 262. Fig. 259 also applies.

Extension House Service Boxes for Water or Gas.

Diameter of Shaft, 2½ inches.



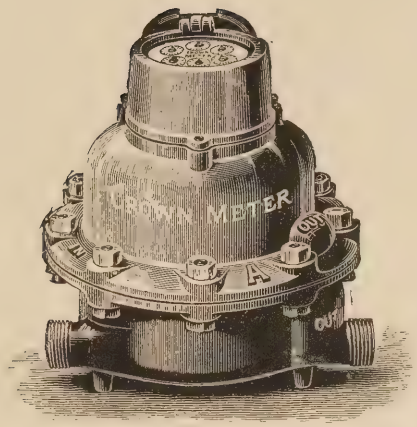
Fig. 269.
HOUSE SERVICE BOX.

Size.	Fig.	Extension.	Each.
1A	269	1 ft. to 2 ft	.60
1½A	269	1 " 6 in. to 2 ft. 6 in	.68
1¾A	269	1 " 9 " 2 " 9 "	.70
2A	269	2 " " 3 "	.73
2½A	269	2 " 6 " 3 " 6 in	.75
3A	269	3 " " 4 "	.80
3½A	269	3 " 6 " 4 " 6 in	.85
4A	269	4 " " 5 "	.95
2B	269	2 " " 3 " 6 in	.75
2½B	269	2 " 6 " 4 "	.80
3B	269	3 " " 4 " 6 in	.83
3½B	269	3 " 6 " 5 "	.90
4B	269	4 " " 5 " 6 in	1.00

Keys extra.

Water Meters.

Crown Water Meter.



"A" CROWN METER.

The Crown Meter is so well known and its popularity so universal that it does not require an introduction. At the present time it is in use in over 2,500 cities and towns in the United States, the Dominion of Canada and many foreign countries, and it has received the unqualified approval and recommendation of hundreds of our ablest engineers and water works officials.

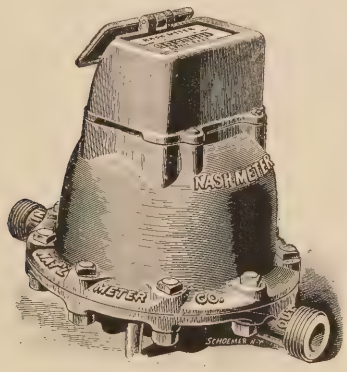
The Crown, being positive in its action, will measure with absolute correctness all streams, whether large or small, under all the conditions of fluctuating pressures. Its accuracy has been proved by innumerable tests.

There are four main parts to the Crown Meter: 1st. The cover, which includes the intermediate gearing, and the counter or registering mechanism. 2d. The base, which contains the inside cylinder. The base has the inlet and outlet spuds attached, and is arranged to be bolted to the cover. 3d. Inside cylinder. This consists of three parts: the ring, and the top and bottom cylinder heads. The perfection of this cylinder assists in developing the accuracy of the registration, as this is the part in which the piston revolves. 4th. The piston. This is practically the only working part. It is made of hard rubber, of about the specific gravity of water. The piston has no bearing whatever, as it practically floats. It is perfectly balanced, and therefore frictionless in its operation.

Size. Inches.	Greatest Proper Quantity per Minute.			
3/8	1 cubic ft. or		7 1/2 gal.	
1/2 or 5/8	2	"	15	"
3/4	4	"	30	"
1	8	"	60	"
1 1/2	12	"	90	"
2	20	"	150	"
3	36	"	270	"
4	72	"	540	"
6	120	"	900	"

Price.	Connections. Per Set.	Dimensions and Weight. Length. Inches.	Height Over All. Inches.	Width. Inches.	Weight. Pounds.
13.34	.40	6	7 3/8	5 5/8	10
16.00	.54	7 1/4	7 1/2	7	17
28.00	.80	9	8 3/4	8 3/4	30
40.00	1.07	10 7/8	10 1/4	10	49
66.67	Flanges furnished without extra charge.	12 5/8	12	11	59
86.67		15 1/4	14 1/8	12 3/4	102
180.00		24	16 1/2	15 1/2	214
333.34		29 1/4	20 1/2	21	440
666.67		36 3/4	28 1/2	29	965

SPECIAL NOTE.—The prices mentioned above are the same for Meters fitted with the round porcelain dials or for those arranged with the straight-reading registers. The Meters arranged with the round dials are known as the "A" Crown, whereas those fitted with the straight-reading registers are classified as "AA" Crown. The "AA" Crown Meters are made only in the sizes from the 3/8-inch to the 2-inch inclusive, whereas the Crown Meters with the round dials are made in all sizes from the 3/8-inch to the 6-inch inclusive. Unless we are advised to the contrary, we always send the "AA" Crown Meters in sizes from 3/8-inch to 2-inch.



"AA" NASH METER.

"AA" Nash Meters.

Straight-Reading Registers.

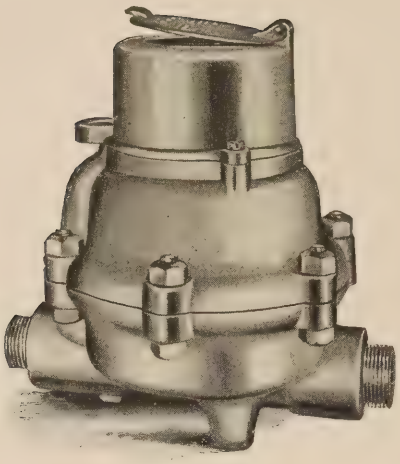
Nash Meters arranged with straight-reading registers are classified as "AA" Nash. Thousands of "AA" Nash Meters are in use in different sections of the country, and it is evident that the straight-reading register is steadily growing more popular, as the demand for it is constantly increasing. The straight-reading register is so simple that every consumer will be able to read his own Meter without previous instruction.

"A" and "AA" Nash Meter—Straight-Reading Register.

Size Inches.	Greatest Proper Quantity per Minute.			
1/2 or 5/8	2 cubic ft. or		15 gals.	
3/4	4	"	30	"
1	8	"	60	"
1 1/2	12	"	90	"
2	20	"	150	"
3	36	"	270	"
4	72	"	540	"
6	120	"	900	"

Price.	Connections. Per Set.	Length. Inches.	Height Over All. Inches.	Width. Inches.	Weight. Pounds.	Weight Boxed. Pounds.
10.67	.54	7 1/4	7 1/4	5 5/8	10	14
16.00	.80	9 1/4	7 3/4	7	14	20
21.34	1.07	10 7/8	8 1/2	8 5/8	21	28
40.00	Flanges furnished without extra charge.	12 5/8	11	7 5/8	35	49
66.67		15 1/4	12	9 1/2	54	72
120.00		24	15 1/2	11 1/2	106	131
233.34		29	19	14 1/4	200	240
500.00		38	25	18	400	445

Hersey Water Meters.



Hersey Water Meters

Are in general use by Water Departments throughout the country, and are recognized as leading types of meters adapted to meet the demands of Water Departments for their various kinds of service.

The Hersey Disc Meter.

Where first cost is a particular consideration, and where it is at the same time desired to procure a meter thoroughly accurate and entirely reliable, this meter is recommended.

The Hersey Rotary Meter.

Where it is desired to secure a meter which is practically indestructible, and one which is capable of performing an unusual amount of very severe service, this meter is recommended.

The Hersey Torrent Meter.

Where it is desired to measure the largest volume of water with the least possible reduction of pressure, this meter is recommended.

Hersey Disc Meters.

Size	5/8	3/4	1	1 1/2	2	3	4	6
Meters	10.00	15.00	20.00	37.50	62.50	112.50	218.75	468.75
Connections	.50	.75	1.00	----	----	----	----	----

Flanges or Bell and Spigot connections for Meters from 1½-inch to 6-inch no charge.

Hersey Rotary Meters.

Size	5/8	3/4	1	1 1/2	2	3	4	6
Meters	15.00	26.25	37.50	62.50	81.25	168.75	312.50	625.00
Connections	.50	.75	1.00	----	----	----	----	----

Flanges or Bell and Spigot connections for Meters from 1½-inch to 6-inch no charge.

Hersey Torrent Meters.

Size	2	3	4	6	8	10	12
Meters	50.00	100.00	200.00	437.50	812.50	1000.00	1500.00

Flanges, or Bell and Spigot connections no charge.

Specials for Hersey Water Meters.

Meter Dial Extensions.

Size, inclusive	5/8 to 1 1/2	2 to 12
Each	1.88	2.50

Extensions over three feet in length, .25 per foot extra.

Simplex Strainers.

Size	5/8	3/4	1
Each	.63	.94	1.25

Crossway Strainers.

Size	5/8 and 3/4	1	1 1/2 and 2
Each	2.50	5.00	7.50

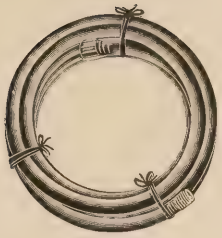
Pot Strainers.

Size	3	4	6	8	10 and 12
Each	12.50	18.75	25.00	50.00	187.00

Hot Water Meters.

Size	1	1 1/2	2	3	4	6
Each	30.00	56.25	81.25	150.00	300.00	562.50

Hose.



WATER HOSE.



WATER HOSE, WIRE WOUND.

Internal Diam.	½	¾	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3½	4	5	6	8
Two-Ply	.20	.25	.33	.42	.50	.58	.66	.75	.83	.92	.99	1.16	1.32	1.65	1.98	2.64
Three-Ply	.25	.30	.40	.50	.60	.70	.80	.90	1.00	1.10	1.20	1.40	1.60	2.00	2.40	3.20
Four "	.30	.37	.50	.62	.75	.87	1.00	1.12	1.25	1.37	1.50	1.75	2.00	2.50	3.00	4.00
Five "	.37	.46	.62	.77	.93	1.08	1.25	1.40	1.56	1.71	1.87	2.18	2.50	3.13	3.75	5.00
Six "	.45	.55	.75	.93	1.12	1.30	1.50	1.68	1.87	2.05	2.25	2.62	3.00	3.75	4.50	6.00

Wire Winding Hose.

List prices for Winding Water Hose with round tinned steel wire:

Internal Diameter	½	¾	1	1¼	1½	1¾	2	2¼	2½
Three-Ply, per foot	.03	.03	.04	.05	.06	.07	.08	.09	.10
Four " " "	.03	.03½	.05	.06	.07½	.09	.10	.11	.12
Five " " "	.03½	.04½	.06	.07½	.09	.11	.12	.14	.15
Six " " "	.04	.05	.07	.09	.11	.13	.15	.17	.18



STEAM HOSE, SIX-PLY.

Steam Hose.

We handle Steam Hose of the highest grade, and while it is not guaranteed as to time of service, it will be replaced in the event of failure, through defect, after a reasonable trial, providing our table is followed in the selection of the hose for the duty imposed upon it.

Internal Diameter	½	¾	1	1¼	1½	1¾	2	2¼	2½	3
Three-Ply	.43	.51	.67	.85	1.02	1.18	1.34	1.50	1.66	2.00
Four "	.51	.67	.83	1.04	1.25	1.45	1.66	1.87	2.03	2.80
Five "	.63	.83	1.03	1.30	1.56	1.81	2.07	2.33	2.60	3.50
Six "	.76	1.00	1.24	1.56	1.87	2.17	2.49	2.80	3.12	4.20

To obtain price on higher plies than given, add to the price given for 4-ply .25 per cent. for each additional ply.

To secure best economy, select the number of plies specified in the following table:

Size Hose	½	¾	1	1¼	1½	2
No. plies for 20 lbs	4	4	4	4	4	4
" " 30 "	4	4	4	4	4	5
" " 40 "	4	4	4	4	5	6
" " 50 "	4	4	5	5	5	8
" " 60 "	4	5	6	6	6	8
" " 70 "	5	6	7	7	8	10
" " 80 "	6	6	8	8	9	10
" " 90 "	6	6	8	9	10	--
" " 100 "	8	8	10	10	10	-

When pressure is over 80 lbs. we recommend that hose be wrapped with marline.
Hose can be marline wound so that if cut it will not unwind.

WIRE WOUND STEAM HOSE.—Same list as above; net price governed by discount.

Brewers' Hose.

To produce good Brewers' Hose many important points must be guarded. The cover must be made extra heavy, and of good tough rubber, designed to stand rough usage and give great wear. The duck must be strong and so made as to prevent the hose from kinking; the friction rubber must firmly unite the layers of duck; the tube must be specially adapted to convey hot liquors, etc., without injury.

We can supply hose manufactured on above lines.

List prices same as for Steam Hose.

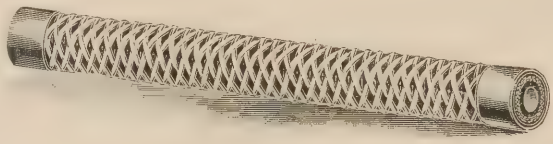
Hose.

Air Drill Hose.

Size	¾	1	1¼	1½	2	2¼	2½	3
Four Ply	.67	.83	1.04	1.25	1.66	1.87	2.08	----
Five Ply	.84	1.04	1.30	1.56	2.08	2.33	2.60	----
Six Ply	1.00	1.25	1.56	1.88	2.49	2.80	3.12	4.20

Wine Hose.

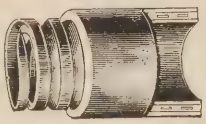
Size	¾	1	1¼	1½	1¾	2
Four Ply	.67	.83	1.04	1.25	1.45	1.66
Five Ply	.83	1.03	1.30	1.56	1.81	2.07
Six Ply	1.00	1.24	1.56	1.87	2.17	2.49



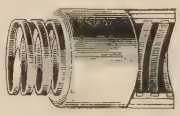
STEEL ARMOR FOR HOSE.

This reinforcement of rubber hose consists of flat steel galvanized wire braided about the hose as shown in cut. It can be attached to any size or length of hose. It is particularly serviceable for hose used in mines, mills and factories. Used largely by contractors in places where the hose is subjected to great hydraulic or pneumatic pressure.

Quotations will be made on specification of size, quantities and conditions.



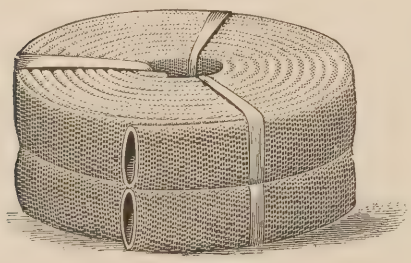
SMOOTH BORE.



SPIRAL COIL.

Suction Hose.

Internal Diameter	¾	1	1¼	1½	1¾	2	2½	3	3½	4	4½
Smooth Bore	---	---	----	----	----	2.60	3.50	4.50	5.50	6.50	7.50
Spiral Coil, per foot	.70	.90	1.15	1.50	1.90	2.30	3.10	4.00	4.90	5.80	6.70
Internal Diameter	5	5½	6	6½	7	7½	8	9	10	12	
Smooth Bore	8.50	9.50	10.50	12.00	13.50	15.00	16.50	19.50	22.50	27.50	
Spiral Coil, per foot	7.60	8.50	9.50	10.50	12.00	13.50	15.00	17.50	20.00	25.00	



UNLINED LINEN HOSE.

Underwriters' Unlined Linen Hose.

Size	¾	1	1¼	1½	2	2½	3
Underwriters' No. 1, per foot	.18	.21	.23	.27	.31½	.36	.44
" " 2, "	.13½	.15	.20	.23	.27½	.32	.38

Unlined Linen Hose.

Size	¾	1	1¼	1½	2	2½	3
Per foot	.11	.13	.15	.17	.21	.23	.31



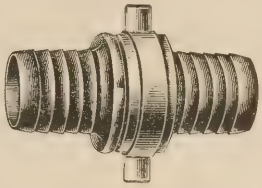
Rubber Lined Cotton Mill Hose.

Size	½	¾	1	1¼	1½	2	2¼	2½
Per Foot	.25	.30	.40	.45	.50	.60	.65	.70

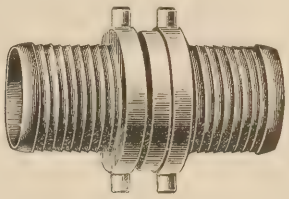
Hose Couplings and Appliances.



PLAIN HOSE COUPLING.



LUG HOSE COUPLING.



SUCTION HOSE COUPLING.

Plain Hose Couplings.

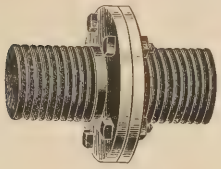
Size	½	¾	1
Hose Thread, per dozen	2.40	2.40	4.40
Iron Pipe Thread, "	2.65	2.65	4.65

Lug Hose Couplings.

Size	1¼	1½	2	2½
Hose Thread, per dozen	10.00	14.00	24.00	48.00
Iron Pipe Thread, "	10.50	15.00	26.00	50.00

Suction Hose Couplings.

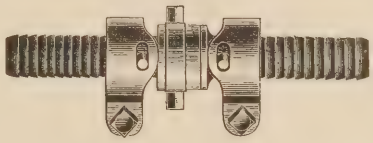
Size	2	2½	3	3½	4	4½	5	6	7	8
Each	4.00	5.25	7.50	9.50	12.50	16.00	20.00	28.00	54.00	80.00



IRON FLANGED SUCTION HOSE COUPLING.
Prices on application.



STEAM HOSE COUPLING.
Iron Pipe Threads.



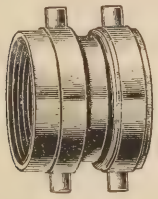
IMPROVED STEAM HOSE COUPLING AND BANDS.
Iron Pipe Threads.

Steam Hose Couplings—Iron Pipe Threads.

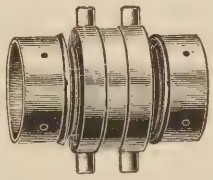
Size	½	¾	1	1¼	1½	2	2½
Per dozen	15.50	15.50	19.00	25.50	32.00	44.00	75.00

Improved Steam Hose Coupling and Bands—Iron Pipe Threads.

Size	½	¾	1	1¼	1½	2	2½
As shown, each	.96	.96	1.05	1.45	1.78	2.60	4.25
Extra Bands, each	.13	.13	.15	.17	.24	.32	.40



DOUBLE FEMALE COUPLING.
For Connecting two Male Ends of Hose Coupling.



HOSE COUPLING AND BANDS.
For Linen Hose.



HOSE CLAMP.
Rath's Patent.



HOSE CLAMP.
Bolt and Nut.

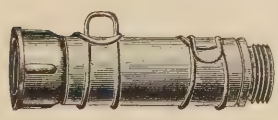


HOSE MENDER.

Size.	Coppered, Per Doz.
½	.40
¾	.50
1	1.00

Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Double Female Coupling, each	----	----	----	2.75	3.30	4.40	6.40	15.00	----	----
Hose Couplings and Bands, "	----	----	----	2.00	2.50	3.50	4.25	8.00	----	----
Hose Clamps, Rath's Patent, per dozen	1.44	1.44	1.80	2.40	3.12	4.20	6.60	----	----	----
" " Bolt and Nut, "	1.50	1.50	2.00	2.50	3.00	4.00	7.00	10.00	24.00	30.00

Caldwell Hose Straps.



CALDWELL HOSE STRAP.

No	2	4	6	8	10	12	14	16	18
Inch	½	½	¾	¾	1	1	1¼	1¼	1½
Inch long	3⅜	3¾	4⅛	4¾	5	5⅜	6	6⅜	6¾
Per dozen	.40	.40	.60	.60	.80	.80	1.00	1.00	1.20
No	20	22	24	26	28	30	32	34	36
Inch	1½	1¾	1¾	2	2	2¼	2¼	2½	2½
Inch long	7⅛	7½	8	8½	9	9½	10	10½	11
Per dozen	1.20	1.40	1.40	1.60	1.60	1.80	1.80	2.00	2.00

Hose Strap Fasteners No. 1, each .50. No. 2 .75.

Hose Pipes.



HOSE PIPE, PLAIN.

Hose Pipes—Plain.



HOSE PIPE, WITH SCREW TIP.

Size	¾	1	1¼	1½	2	2½	2½
Length	8	9	10	10½	11	12	20
Hose Thread, per dozen	7.00	9.00	15.00	18.00	30.00	48.00	78.00
Iron Pipe Thread, per dozen	8.20	10.20	16.20	20.50	33.00	51.50	81.50

Hose Pipes, with Screw Tip.

Size	¾	¾	1	1	1¼	1¼	1½	1½	2	2	2½	2½
Length	8	14	9½	16	11	19	12	22	13½	28	21	32
Hose Thread, per dozen	8.00	12.00	10.00	18.00	18.00	36.00	25.00	46.00	39.00	60.00	100.00	120.00
Iron Pipe Thread, per dozen	9.20	13.20	11.20	19.20	19.20	37.20	27.50	48.50	42.00	63.00	103.50	126.00



HOSE PIPE, SCREW TIP, WITH HANDLE.



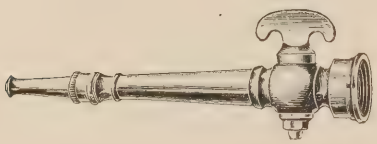
UNDERWRITERS' HOSE PIPE, SCREW NOZZLE, SWIVEL HANDLE, WOUND AND PAINTED.

Hose Pipe, Screw Tip, with Handle.

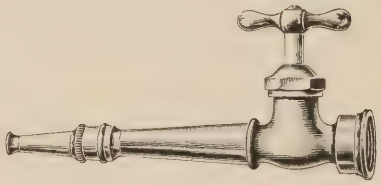
Size	2½
Length	32
Per dozen	288.00

Underwriters' Hose Pipe.

Size	2½
Length	30
Each	12.00



HOSE PIPE, COCK ON LARGE END.



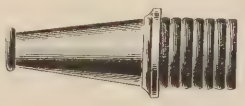
HOSE PIPE, COMPRESSION.

Hose Pipes, Cock on Large End.

Size	¾	¾	¾	1	1	1¼	1¼	1½	1½	2	2½
Length	8	12	16	9	18	11	22	12	24	30	36
Hose Thread, per dozen	13.00	18.00	24.00	20.00	34.00	40.00	55.00	55.00	84.00	136.00	250.00
Iron Pipe Thread, per dozen	14.20	19.20	25.20	21.20	35.20	41.20	56.20	57.50	86.50	139.00	256.00

Hose Pipes—Compression.

Size	¾	1
Length	8	10
Hose Thread, per dozen	20.00	24.00
Iron Pipe Thread, per dozen	21.20	25.20



HOSE PIPE, TO TIE ON.

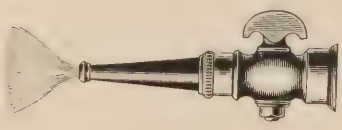
Size	½	¾	1	1¼	1½
Per dozen	3.00	3.50	4.00	6.00	8.50





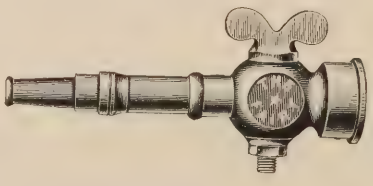
GEM COMBINATION HOSE PIPES, THROWS SOLID STREAM OR SPRAY.

Size	¾	1
Per dozen	10.00	12.00



HOSFORD COMBINATION HOSE PIPE.

Size	¾	1
Per dozen	15.00	18.00



THE FAIRY HOSE NOZZLE.
Throws either Small Stream or Wide Spray.
Per dozen 7.50

Siamese Connections.

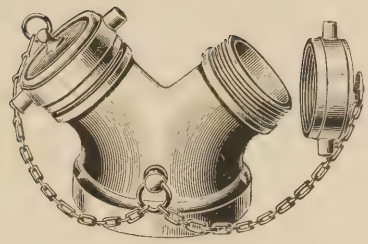


Fig. 1.
SIAMESE HOSE CONNECTION.

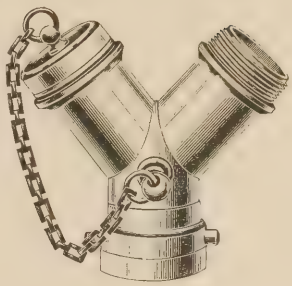


Fig. 2.
SIAMESE HOSE CONNECTION.

Fig. 1. Siamese Hose Connections.

Size, 4½-inch I. P. Thread with 2–2½-inch Hose Thread Outlets.

Rough, without Cap, each	20.00
Finished, " " "	28.00
Rough, with two Caps and Chain, each	24.00
Finished, " " " "	34.00

Fig. 2. Siamese Hose Connections.

Size, 2½-inch Hose Thread with 2–2½-inch Hose Thread Outlets.

Rough, with Cap, each	19.00
Finished, without Cap, each	27.00
Rough, with one Cap and Chain, each	21.00
Finished, " " " "	31.00

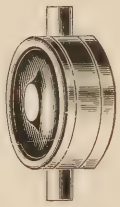
Hose Nipples and Caps.



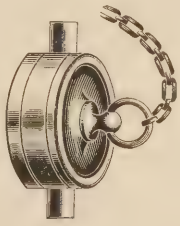
HOSE NIPPLE.



HOSE REDUCER.



HOSE CAP, PLAIN.



HOSE CAP, WITH CHAIN.

Hose Nipples.

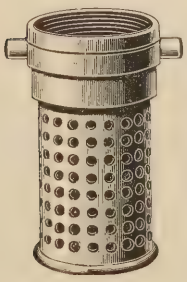
Size	½	¾	1	1¼	1½	2	2½	3	3½	4
Per dozen	3.50	3.50	5.00	9.00	10.00	14.00	28.00	40.00	50.00	75.00

Hose Reducers.

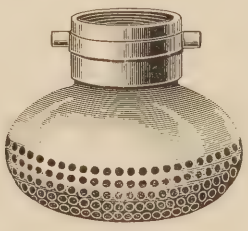
Size	1 x ¾	1¼ x ¾	1¼ x 1	1½ x 1¼	2 x 1½	2½ x ¾	2½ x 1
Per dozen	6.50	10.00	10.00	12.00	18.00	30.00	30.00

Hose Caps—Plain and with Chain.

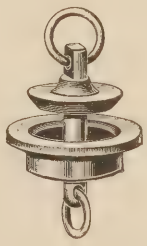
Size	¾	1	1¼	1½	2	2½	3	3½	4
Hose Caps, Plain, Finished, each	.35	.50	.70	.85	1.25	2.00	4.00	5.00	6.00
" " Rough, "	.25	.35	.55	.70	1.00	1.25	3.00	4.00	5.00
" with Chain, Finished, each	.60	.75	1.00	1.20	1.70	2.50	8.00	9.00	10.00
" " " Rough, "	.50	.60	.85	1.05	1.45	1.75	7.00	8.00	9.00



BRASS SUCTION BASKET.



COPPER SUCTION BASKET.
Prices on application.



TANK VALVE.

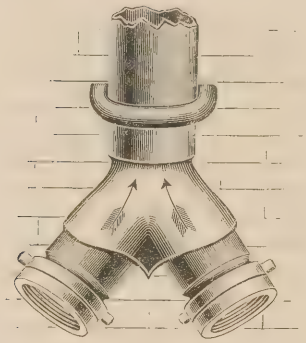
Brass Suction Baskets.

Size	1	1¼	1½	2	2½	3	3½	4	5	6	7	8
Each	1.30	1.50	2.00	4.00	5.00	9.50	16.00	20.00	30.00	40.00	50.00	75.00

Tank Valves.

Size	1	1¼	1½	2	2½
Per doz	6.00	7.00	9.00	12.00	24.00

Siamese Connections and Expansion Ring Couplings.



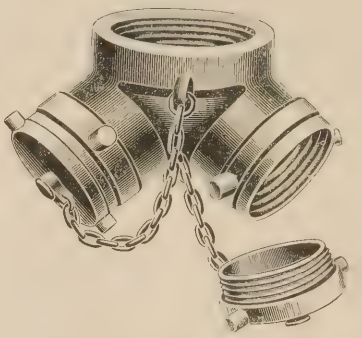
STAND PIPE SIAMESE WITH SINGLE CHECK PLUG AND CHAIN.

Brass Body Painted.

3-inch and 4-inch x 2½ or 3-inch, each	27.50
6-inch x 2½ or 3-inch, each	35.00

Brass Body Polished.

3-inch and 4-inch x 2½ or 3-inch, each	30.00
6-inch x 2½ or 3-inch, each	40.00



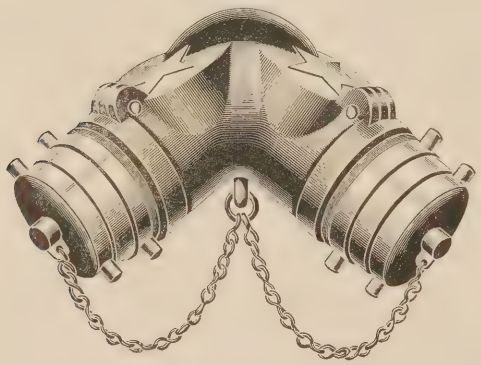
PLAIN SIAMESE CONNECTIONS WITHOUT CHECKS.

Iron Body Painted.

3-inch or 4 inch x 2½ or 3-inch Brass Swivel Connections with Plugs and Chains, each	15.00
6-inch x 2½ or 3-inch, each	20.00

Brass Body.

3-in. or 4-in. x 2½ or 3-in. Painted Body, each	25.00
6 " x 2½ x 3-inch Painted Body, each	27.50
3 " x 2½ or 3 " Polished " "	27.50
6 " x 2½ or 3 " " all over "	35.00
2½-in. Single Roof Connections with Cap and Chain	5.00



STANDARD FIRE DEPARTMENT SIAMESE CONNECTION WITH SWING CHECKS, PLUGS AND CHAINS.

Standard Fire Department Siamese Connection.

Iron Body Painted.

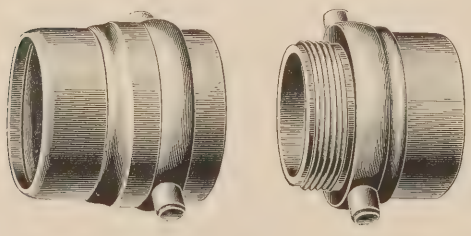
3-inch and 4-inch x 2½ and 3-inch, Finished Trimmings, each	20.00
6-inch x 2½ and 3-inch, each	25.00

Brass Body Painted.

3 inch and 4-inch x 2½ and 3-inch, Finished Trimmings, each	27.50
6-inch x 2½ and 3-inch, each	35.00

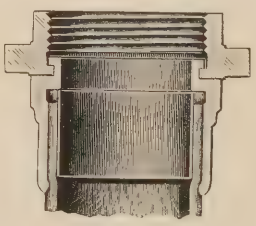
Brass Body Polished.

3-inch and 4-inch x 2½ and 3-inch, Finished Trimmings, each	30.00
6-inch x 2½ and 3-inch, each	40.00
Iron Plates for Perforated Pipe System, each	1.25



IMPROVED EXPANSION RING COUPLINGS.

Size	¾	1	1¼	1½	2	2½	3
Light, per set	1.50	2.00	2.50	2.50	3.00	3.50	----
Medium, "	---	----	----	----	----	----	4.00 7.00
Heavy, "	---	----	----	3.00	3.00	4.00	5.00 9.00
Acme, "	---	----	----	----	----	----	7.00 ----



IMPROVED EXPANSION RING COUPLINGS.

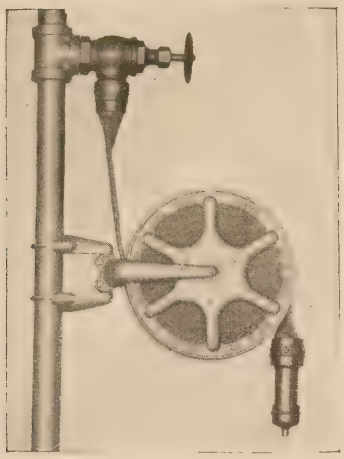
Expansion Rings.

1¼ and 1½-inch, per dozen	2.00
2 " 2½ " "	3.00

Swinging Hose Reels.



SHOWING REEL ATTACHED TO WALL.



SHOWING REEL ATTACHED TO PIPE.

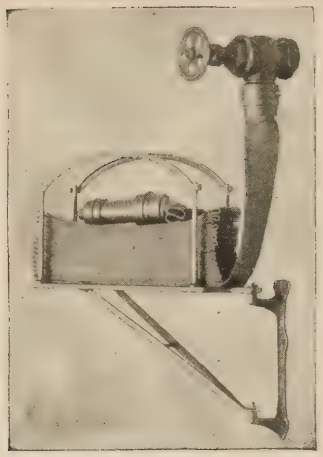
Improved A B C Swinging Hose Reels.

Aluminum finish or any color enamel, with wall plates.

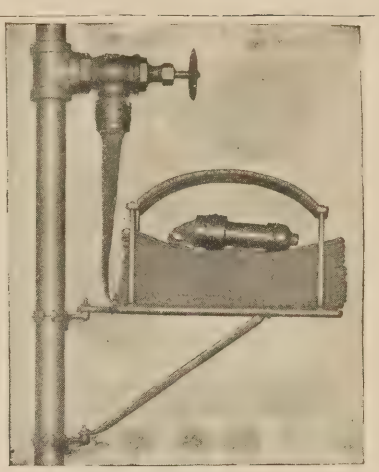
	Size Hose.	Each.
A 1 for 50 ft. Unlined Linen Hose	1½	5.00
A 2 for 50 " "	2	5.00
A 3 for 50 " "	2½	5.00
AA 1 for 75 " "	1½	5.50
AA 2 for 75 " "	2	5.50
AA 3 for 75 " "	2½	5.50
B 1 for 100 " "	1½	6.00
B 2 for 100 " "	2	6.00
B 3 for 100 " "	2½	6.00
C 1 for 150 " "	1½	7.00
C 2 for 150 " "	2	7.00
C 3 for 150 " "	2½	7.00
D 1 for 200 " "	1½	8.00
D 2 for 200 " "	2	8.00
D 3 for 200 " "	2½	8.00
C 1 for 50 ft. Rubber-Lined Cotton Mill Hose	1½	7.00
C 2 for 50 " " "	2	7.00
C 3 for 50 " " "	2½	7.00
D 1 for 100 " " "	1½	8.00
D 2 for 100 " " "	2	8.00
D 3 for 100 " " "	2½	8.00

Above Reels with pipe clamps are .40 each, net, in addition to net cost of above.

Swinging Hose Racks.



SHOWING RACK ATTACHED TO WALL.

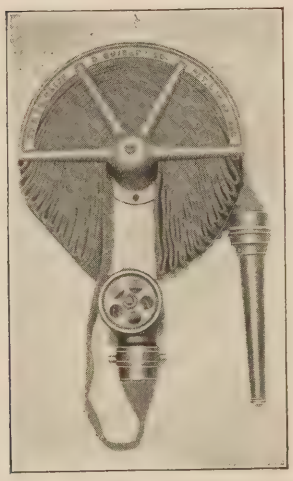


SHOWING RACK ATTACHED TO PIPE.

Swinging Hose Racks.

Aluminum Finish or Any Color Enamel.

No.				Size Hose.	With Wall Plate. Each.	With Pipe Clamp. Each
X 1		for 25 ft.	Unlined Linen Hose	1	5.00	5.40
X 2		for 50	" " "	1	5.00	5.40
X 3		for 75	" " "	1	5.50	5.90
X 4		for 100	" " "	1	6.00	6.40
0	Narrow,	for 50	" " "	1½	5.00	5.40
0		for 50	" " "	2	5.00	5.40
00		for 50	" " "	2½	5.00	5.40
1	Special Narrow,	for 75	" " "	1½	5.50	5.90
1	"	for 75	" " "	2	5.50	5.90
2	"	for 75	" " "	2½	5.50	5.90
1	Narrow,	for 100	" " "	1½	6.00	6.40
1		for 100	" " "	2	6.00	6.40
2		for 100	" " "	2½	6.00	6.40
3	Special Narrow,	for 125	" " "	1½	6.50	6.90
3	"	for 125	" " "	2	6.50	6.90
4	"	for 125	" " "	2½	6.50	6.90
3	Narrow,	for 150	" " "	1½	7.00	7.40
3		for 150	" " "	2	7.00	7.40
4		for 150	" " "	2½	7.00	7.40
5	Narrow,	for 200	" " "	1½	7.50	7.90
5		for 200	" " "	2	7.50	7.90
6		for 200	" " "	2½	8.00	8.40
3	Narrow,	for 50 ft.	Rubber-Lined Cotton Mill Hose	1½	7.00	7.40
3		for 50	" " "	2	7.00	7.40
4		for 50	" " "	2½	7.00	7.40
5	Narrow,	for 100	" " "	1½	7.50	7.90
5		for 100	" " "	2	7.50	7.90
6		for 100	" " "	2½	8.00	8.40



SHOWING RACK ATTACHED TO WALL.

In ordering Racks with Pipe Clamps always state internal diameter or external circumference of pipe to which Racks are to be attached.

Racks nickel plated on iron are 3.00 each, net, more than above.

Special quotations for other styles of finish furnished on application.

Saddle Rack.

These Racks have a capacity for holding, in reasonable length folds, any quantity of unlined linen hose not exceeding 200 feet.

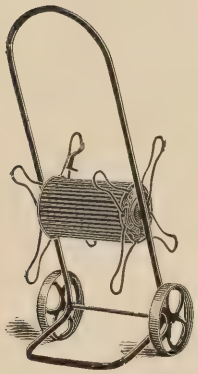
The hubs for these Racks are made in three widths, adapted respectively for 1½, 2 or 2½ inch hose.

In ordering always state size of hose they are wanted for and whether wall plates or pipe clamps are desired.

Racks finished aluminum or any other color enamel.

Price, each 3.00

Tubular All Metal Hose Reels.



NO. 1. CART.

No. 1. Cart.

Tubular frame, wire "holds," corrugated iron drum, wheels 7 inches in diameter.

The only reel with a corrugated drum. This allows a circulation of air under the hose and prevents mildew. Four of these reels form a natural crate, the drums being "nested" in the frames.

Weight, 12½ pounds.

Each 2.00

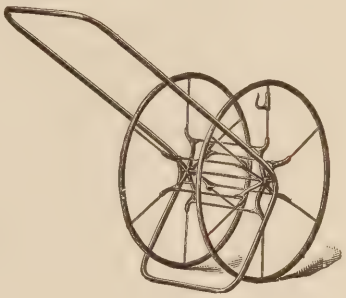
Lawn or Garden Reel.

Frictionless.

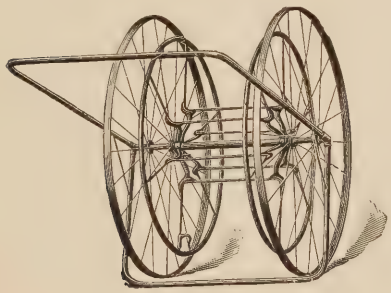
Simple in construction, easily manipulated and almost unbreakable.

Nos. 40 and 50 are intended for mill and factory use.

No.	Height of Reel. Inches.	Weight. Pounds.	Capacity, Feet, ¾-inch Hose.	Capacity, Feet, 2½-inch Rubber Hose.	Each.
10	21	17	100	----	3.50
20	24	20	150	----	4.00
30	30	30	400	----	6.50
40	35	75	----	100	25.00
50	40	100	----	200	32.50



LAWN OR GARDEN REEL.



PARK REEL.

Park Reel.

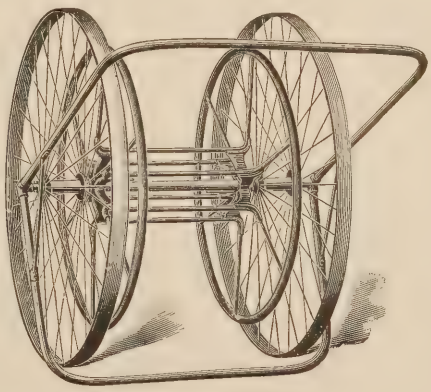
A tubular iron reel, mounted on steel wheels, for lawn, greenhouse or park use.

No.	Height of Wheel. Inches.	Weight. Pounds.	Capacity. ¾-inch Hose.	Each.
21	28	40	200	7.50
31	34	50	500	10.50

Warehouse Reel.

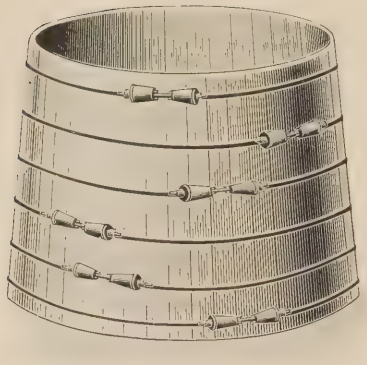
For mills, factories and village fire departments.

No	Height of Wheel. Inches.	Outside Width of Reel. Inches.	Weight. Pounds.	Capacity 2½-inch Rubber Fire Hose. Feet.	Each.
41	42	37½	130	150	35.00
51	48	40	180	300	45.00
61	52	46	200	500	55.00

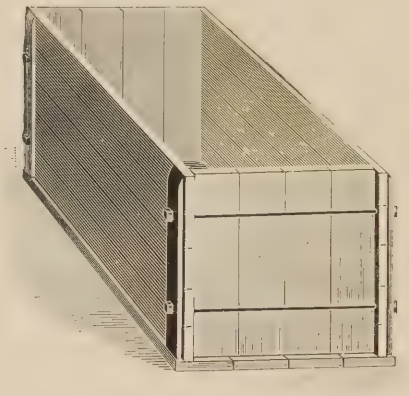


WAREHOUSE REEL.

The Nason Cypress Tanks and Cisterns.



CIRCULAR TANK.



RECTANGULAR TANK.

Circular Tanks with Galvanized Steel Hoops, including Patent Lugs and Draw Bolts on all Hoops.

Gallons, Capacity	500	750	1000	1250	1500	1750	2000	2500	3000	3500
Approximate Weight	400	500	600	700	800	900	1000	1100	1200	1500
List, each	**24.00**	**28.00**	**34.00**	**40.00**	**44.00**	**48.00**	**54.00**	**60.00**	**70.00**	**88.00**
Gallons Capacity	4000	4500	5000	6000	7000	8000	9000	10000	12500	15000
Approximate Weight	1700	1900	2100	2300	2500	2700	2900	3300	4200	4500
List, each	**98.00**	**104.00**	**110.00**	**128.00**	**136.00**	**144.00**	**152.00**	**170.00**	**200.00**	**216.00**
Gallons Capacity	17000	20000	25000	30000	35000	40000	45000	50000		
Approximate Weight	5000	5500	6500	7500	8500	9500	10000	10600		
List, each	**244.00**	**274.00**	**318.00**	**352.00**	**402.00**	**416.00**	**432.00**	**508.00**		

Small Tanks, up to 250 gallons **16.00**
" " 250 to 400 " **20.00**

Larger sizes quoted on application.

All Tanks are shipped knocked down and properly crated. Galvanized Hoops are invariably recommended, but plain black hoops can be furnished if wanted. They are about 5 per cent. cheaper. Tanks up to 3,000 gallons furnished with standard 1½-inch staves and 2-inch bottom. Other sizes, 2-inch bottom, 2-inch staves.

Table showing capacities of Tanks in gallons for heights and diameters given.

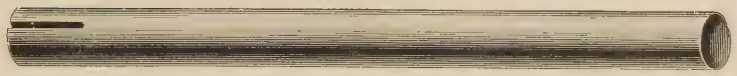
Length of Staves in Ft.	Diameter of Tanks in Feet.															
	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
5	725	1060	1440	1875	2380	2925	3550	4237	4960	5765	6698	7520	9516	11750	14215	16918
6	870	1270	1728	2250	2855	3510	4260	5084	5952	6918	8038	9024	11419	14100	17059	20302
7	1015	1480	2016	2625	3330	4095	4970	5931	6944	8071	9378	10528	13322	16450	19902	23680
8	1160	1690	2304	3000	3805	4680	5680	6778	7936	9224	10718	12032	15225	18800	22745	27070
9	1305	1900	2592	3375	4280	5265	6390	7625	8928	10377	12058	13536	17128	21150	25588	30454
10	1450	2110	2880	3750	4755	5850	7100	8472	9920	11530	13398	15040	19031	23500	28431	33838
11	1595	2320	3168	4125	5230	6435	7810	9319	10913	12683	14738	16544	20934	25850	31274	37222
12	1740	2530	3456	4500	5705	7020	8520	10166	11904	13836	16078	18048	22837	28200	34117	40606
14	2030	2950	4032	5250	6655	8190	9940	11860	13888	16142	18758	21056	26643	32900	39803	47374
16	2320	3370	4608	6000	7605	9360	11360	13554	15872	18448	21438	24064	30449	37600	45489	54142

Above capacities are based on straight staves. Unless otherwise ordered, we make all tanks with a slight taper.

Rectangular Tanks.

Rectangular Tanks are quoted on application only, and prices will be without bolts, unless specially requested. These tanks are not recommended, except where a round tank cannot be used. Round tanks are cheaper and generally more satisfactory.

Finished Shafting.



Cut to Lengths from 1 foot to 24 feet, inclusive.

Diameter.	Weight per Foot.	Price per Pound.	Diameter.	Weight per Foot.	Price per Pound.	Diameter.	Weight per Foot.	Price per Pound.
1/4	.167	.10	1 5/8	7.06	.05	3	24.05	.05
5/16	.260	.08 1/2	1 11/16	7.61	.05	3 1/16	25.07	.05 1/4
3/8	.375	.07	1 3/4	8.18	.05	3 1/8	26.09	.05 1/4
7/16	.511	.07	1 13/16	8.78	.05	3 3/16	27.16	.05 1/4
1/2	.667	.07	1 7/8	9.39	.05	3 1/4	28.22	.05 1/4
9/16	.845	.06	1 15/16	10.03	.05	3 5/16	29.32	.05 1/4
5/8	1.05	.06	2	10.69	.05	3 3/8	30.43	.05 1/4
11/16	1.26	.06	2 1/16	11.35	.05	3 7/16	31.58	.05 1/4
3/4	1.50	.05 1/2	2 1/8	12.07	.05	3 1/2	32.73	.05 1/2
13/16	1.77	.05 1/2	2 3/16	12.80	.05	3 9/16	34.00	.05 1/2
7/8	2.05	.05 1/2	2 1/4	13.52	.05	3 5/8	35.20	.05 1/2
15/16	2.35	.05 1/2	2 5/16	14.35	.05	3 11/16	36.40	.05 1/2
1	2.68	.05 1/2	2 3/8	15.07	.05	3 3/4	37.57	.05 1/2
1 1/16	3.02	.05 1/2	2 7/16	15.89	.05	3 7/8	39.85	.05 1/2
1 1/8	3.38	.05 1/2	2 1/2	16.70	.05	3 15/16	41.40	.05 1/2
1 3/16	3.77	.05 1/2	2 9/16	17.55	.05	4	42.75	.06
1 1/4	4.17	.05 1/2	2 5/8	18.41	.05	4 1/4	48.26	.06
1 5/16	4.61	.05 1/2	2 11/16	19.31	.05	4 7/16	52.62	.06
1 3/8	5.05	.05 1/2	2 3/4	20.21	.05	4 1/2	54.11	.06 1/2
1 7/16	5.52	.05 1/2	2 13/16	21.15	.05	4 3/4	60.88	.06 1/2
1 1/2	6.01	.05	2 7/8	22.09	.05	4 15/16	65.50	.06 1/2
1 9/16	6.52	.05	2 15/16	23.06	.05	5	67.45	.07

All Shafts larger than 4 inch are turned and polished.

Extras for Cutting Long and Short Lengths.

For shafts 6 inches to 11 3/4 inches long, 1/2c. per lb. net extra.
For shafts 3 inches to 5 3/4 inches long, 1c. per lb. net extra.
For shafts shorter than 3 inches, special price quoted upon application.
For shafts over 24 feet and less than 30 feet, 1/2c. per lb. net extra.
For shafts 30 feet and less than 35, 1c. per lb. net extra.
For shafts 35 feet and longer, special price quoted upon application.
We are prepared to furnish Turned Shafting all sizes up to 37 feet in length.

Keyseating of Shafting.

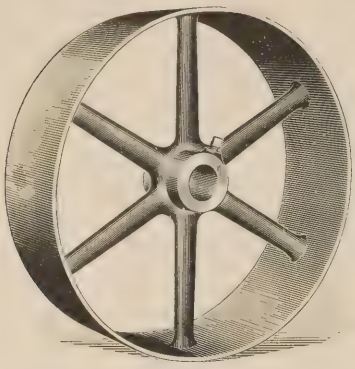
Location of pulley and other special keyseats should be plainly shown by sketch, and orders should designate which shafts are to be keyseated upon both ends for couplings and which upon one end only.

All shafts containing pulley or other special keyseats should be tested after the keyseating has been finished, and re-straightened if necessary. This applies alike to turned shafts and calendered shafts.

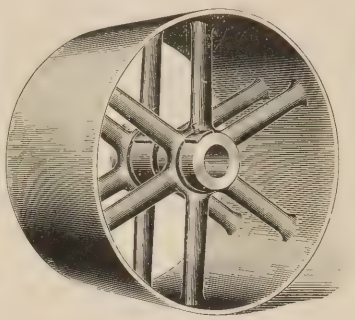
Dimensions of Standard Keyseats.

Diameter of Shaft, Inches.	Keyseat. Width, Inches.	Keyseat. Depth, Inches.	Diameter of Shaft, Inches.	Keyseat. Width, Inches.	Keyseat. Depth, Inches.
15/16 to 1 1/8	1/4	1/8	5 1/4 to 6 7/16	1 1/8	9/16
1 5/16 to 1 5/16	5/16	5/32	6 1/2 to 7 1/16	1 1/4	5/8
1 3/8 to 1 13/16	3/8	3/16	7 3/4 to 8 15/16	1 3/8	11/16
1 7/8 to 2 5/16	1/2	1/4	9 to 10 9/16	1 1/2	3/4
2 3/8 to 2 13/16	5/8	5/16	10 1/4 to 11 7/16	1 5/8	13/16
2 7/8 to 3 5/16	3/4	3/8	11 1/2 to 12 11/16	1 3/4	7/8
3 3/8 to 3 13/16	7/8	7/16	12 3/4 to 13 15/16	1 7/8	15/16
3 7/8 to 5 3/16	1	1/2	14 to 14 15/16	2	1

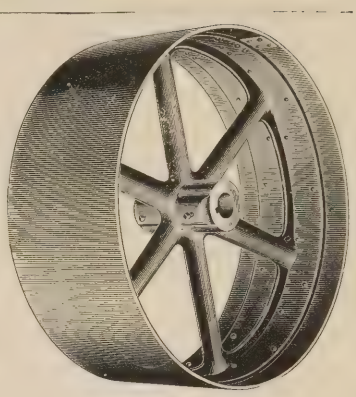
Iron Pulleys.



MOULDED CAST IRON PULLEY.
Single Arm.



MOULDED CAST IRON PULLEY.
Double Arm.



STEEL RIM PULLEY.
Same List as Cast Iron.
Net Prices Governed by Discount.

Diam.	Face.	Single Belt.	Diam.	Face.	Single Belt.	Double Belt.	Diam	Face.	Single Belt.	Double Belt.	Diam.	Face.	Single Belt.	Double Belt.	Diam.	Face.	Single Belt.	Double Belt.
3	2	1 40	6	3	1.95	2.55	8	13	5.20	7.15	11	3	2.70	3.55	15	6	4.60	6.30
	3	1.55		4	2.10	2.80		14	5.60	7.75		4	2.95	3.95		7	5.05	6.95
	4	1.70		5	2.30	3.10						5	3.25	4.40		8	5.50	7.65
	5	1.85		6	2.55	3.45	8½	3	2.35	3.05		6	3.60	4.90		9	5.95	8.40
	6	2.00		7	2.80	3.80		4	2.55	3.35		7	3.95	5.40		10	6.45	9.15
				8	3.05	4.15		5	2.80	3.70		8	----	5.95		11	6.95	9.90
3½	2	1.45		9	3.30	4.50		6	3.05	4.10		9	----	6.45		12	----	10.70
	3	1.60		10	3.60	4.85		7	3.35	4.50		10	----	7.05		13	----	11.50
	4	1.75		11	3.90	5.25		8	3.65	4.95		11	----	7.65		14	----	12.35
	5	1.90		12	4.20	5.65		9	3.95	5.40		12	----	8.20	16	3	3.60	4.70
	6	2.05						10	4.30	5.90		13	----	8.85		4	3.95	5.30
	7	2.20	6½	3	2.05	2.65		11	4.65	6.40		14	----	9.50		5	4.40	6.00
				4	2.20	2.90		12	5.00	6.85						6	4.90	6.70
4	2	1.50		5	2.40	3.25		13	5.35	7.40	12	3	2.85	3.75		7	5.35	7.45
	3	1.65		6	2.65	3.70		14	5.75	8.05		4	3.15	4.20		8	5.85	8.20
	4	1.80		7	2.90	3 95						5	3.50	4.70		9	6.30	9.00
	5	1.95		8	3.15	4.35	9	3	2.40	3.15		6	3.85	5.25		10	6.85	9.90
	6	2.10		9	3.45	4.70		4	2.60	3.45		7	4.20	5.80		11	7.40	10.60
	7	2.25		10	3.75	5.05		5	2.85	3.80		8	4.55	6.35		12	8.00	11.45
	8	2.40		11	4.05	5.50		6	3.15	4.25		9	4.95	6.95		13	----	12.35
				12	4.35	5.90		7	3.45	4.65		10	----	7.55		14	----	13.25
4½	2	1.50						8	----	5.10		11	----	8.15		15	----	14.20
	3	1.70	7	3	2.10	2.75		9	----	5.60		12	----	8.75		16	----	15.15
	4	1.90		4	2.25	3.00		10	----	6.10		13	----	9.40				
	5	2.10		5	2.50	3.35		11	----	6.60		14	----	10.10	17	3	3.80	5.00
	6	2.30		6	2.75	3.70		12	----	7.10	13	3	3.05	3.95		4	4.20	5.65
	7	2.40		7	3.00	4.05		13	----	7.70		4	3.35	4.45		5	4.70	6.40
	8	2.60		8	3.25	4.45		14	----	8.30		5	3.70	5.00		6	5.20	7.15
	9	2.80		9	3.55	4.85						6	4.10	5.60		7	5.70	7.90
				10	3.85	5.25	9½	3	2.50	3.25		7	4.45	6.20		8	6.20	8.75
5	2	1 55		11	4.20	5.70		4	2.70	3.60		8	4.90	6.80		9	6.75	9.60
	3	1.75		12	4.50	6.10		5	2.95	3.95		9	5.25	7.45		10	7.30	10.45
	4	1.95						6	3.30	4.40		10	----	8.10		11	7.90	11.30
	5	2.15	7½	3	2.20	2.85		7	3.60	4.85		11	----	8.75		12	8.50	12.25
	6	2.35		4	2.35	3.10		8	----	5.30		12	----	9.40		13	----	13.20
	7	2.55		5	2.60	3.45		9	----	5.80		13	----	10.10		14	----	14.15
	8	2.75		6	2.85	3.85		10	----	6.30		14	----	10.85		15	----	15.15
	9	2.95		7	3.10	4.20		11	----	6.80						16	----	16.15
	10	3.15		8	3.35	4.60		12	----	7.35	14	3	3.25	4.20	18	3	4.00	5.25
				9	3.70	5.05		13	----	7.95		4	3.55	4.70		4	4.45	5.95
5½	2	1.60		10	4.00	5.50		14	----	8.55		5	3.90	5.30		5	4.95	6.75
	3	1.80		11	4.35	5.95						6	4.35	5.95		6	5.50	7.60
	4	2.00		12	4.65	6.35	10	3	2.55	3.35		7	4.70	6.55		7	6.05	8.45
	5	2.20						4	2.75	3.70		8	5.20	7.20		8	6.60	9.30
	6	2.40	8	3	2.25	2.95		5	3.05	4.10		9	5.60	7.90		9	7.15	10.20
	7	2.60		4	2.45	3.20		6	3.40	4 55		10	6.10	8.60		10	7.75	11.10
	8	2.80		5	2.70	3.55		7	3.70	5 00		11	----	9.30		11	8.40	12.05
	9	3.00		6	2.95	3.95		8	----	5.50		12	----	10.00		12	9.10	13.05
	10	3.20		7	3.20	4.35		9	----	6.00		13	----	10.80		13	----	14.05
	11	3.40		8	3.45	4.75		10	----	6.55		14	----	11.60		14	----	15.10
				9	3.80	5.20		11	----	7.10						15	----	16.15
				10	4.15	5.70		12	----	7.65	15	3	3.40	4.40		16	----	17.20
				11	4.50	6.15		13	----	8.25		4	3.75	5.00		17	----	18.30
				12	4.80	6.60		14	----	8.90		5	4.15	5.65		18	----	19.40

Iron Pulleys—Continued.

Diam.	Face.	Single Belt.	Double Belt.	Double Arm, Double Belt.
19	3	4.25	5.55	
	4	4.70	6.30	
	5	5.25	7.15	
	6	5.85	8.10	
	7	6.45	9.00	
	8	7.05	9.95	
	9	7.65	10.95	
	10	8.30	11.95	
	11	9.00	12.95	
	12	9.75	14.00	
	13	----	15.10	
	14	----	16.25	
	15	----	17.35	
	16	----	18.50	
	17	----	19.70	
	18	----	20.90	
20	3	4.45	5.85	
	4	4.95	6.65	
	5	5.55	7.55	
	6	6.20	8.60	
	7	6.85	9.60	
	8	7.50	10.60	
	9	8.15	11.70	
	10	8.85	12.80	
	11	9.60	13.90	
	12	10.40	15.00	
	13	11.40	16.20	
	14	12.40	17.40	
	15	----	18.60	
	16	----	19.80	
	17	----	21.10	
	18	----	22.40	
	19	----	23.70	
	20	----	25.00	
21	3	4.70	6.15	
	4	5.25	7.00	
	5	5.85	8.00	
	6	6.55	9.10	
	7	7.25	10.20	
	8	7.95	11.30	
	9	8.65	12.45	
	10	9.40	13.65	
	11	10.20	15.85	
	12	11.05	16.00	
	13	12.10	17.25	
	14	13.20	18.55	
	15	----	20.80	
	16	----	21.10	
	17	----	22.50	
	18	----	23.90	
	19	----	25.25	
	20	----	26.65	
22	3	4.90	6.45	
	4	5.55	7.40	
	5	6.15	8.45	
	6	6.90	9.60	
	7	7.65	10.80	
	8	8.40	12.00	
	9	9.15	13.20	
	10	9.95	14.50	
	11	10.80	15.75	
	12	11.70	17.00	
	13	12.85	18.35	
	14	14.05	19.70	
	15	----	21.05	
	16	----	22.40	
	17	----	23.90	
	18	----	25.40	
	19	----	26.85	
22	20	----	28.30	32.55
	21	----	----	34.40
	22	----	----	36.25
	23	----	----	38.10
	24	----	----	40.00
	25	----	----	41.90
	26	----	----	43.85
23	3	5.15	6.70	
	4	5.80	7.75	
	5	6.50	8.90	
	6	7.25	10.10	
	7	8.05	11.40	
	8	8.85	12.70	
	9	9.65	14.00	
	10	10.50	15.35	
	11	11.45	16.65	
	12	12.40	18.00	
	13	13.60	19.40	
	14	14.85	20.85	
	15	----	22.30	
	16	----	23.75	
	17	----	25.30	
	18	----	26.90	
	19	----	28.40	
	20	----	29.95	34.45
	21	----	----	36.45
	22	----	----	38.45
	23	----	----	40.45
	24	----	----	42.45
	25	----	----	44.45
	26	----	----	46.45
24	3	5.40	7.00	
	4	6.10	8.15	
	5	6.85	9.35	
	6	7.65	10.65	
	7	8.45	12.00	
	8	9.30	13.40	
	9	10.20	14.80	
	10	11.10	16.20	
	11	12.10	17.65	
	12	13.15	19.00	
	13	14.90	20.50	
	14	15.70	22.00	
	15	----	23.55	
	16	----	25.10	
	17	----	26.75	
	18	----	28.40	
	19	----	30.05	
	20	----	31.70	36.45
	21	----	----	38.55
	22	----	----	40.70
	23	----	----	42.85
	24	----	----	45.00
	25	----	----	47.05
	26	----	----	49.10
	27	----	----	51.35
	28	----	----	53.60
	29	----	----	55.95
	30	----	----	58.35
25	3	5.70	7.40	
	4	6.50	8.65	
	5	7.25	9.90	
	6	8.10	11.25	
	7	8.95	12.70	
	8	9.90	14.15	
	9	10.85	15.60	
	10	11.85	17.10	
	11	12.90	18.60	
	12	14.05	20.05	
25	13	15.35	21.65	
	14	16.65	23.25	
	15	----	24.90	
	16	----	26.60	
	17	----	28.35	
	18	----	30.10	
	19	----	31.85	
	20	----	33.60	38.65
	21	----	----	40.85
	22	----	----	43.05
	23	----	----	45.20
	24	----	----	47.40
	25	----	----	49.60
	26	----	----	51.80
	27	----	----	54.35
	28	----	----	56.95
	29	----	----	59.50
	30	----	----	62.10
26	3	6.00	7.80	
	4	6.90	9.15	
	5	7.65	10.45	
	6	8.60	11.90	
	7	9.45	13.40	
	8	10.55	14.90	
	9	11.50	16.40	
	10	12.60	18.00	
	11	13.75	19.60	
	12	15.00	21.10	
	13	16.30	22.80	
	14	17.65	24.55	
	15	----	26.30	
	16	----	28.10	
	17	----	29.75	
	18	----	31.80	
	19	----	33.65	
	20	----	35.55	40.85
	21	----	----	43.10
	22	----	----	45.40
	23	----	----	47.70
	24	----	----	50.00
	25	----	----	52.30
	26	----	----	54.60
	27	----	----	56.90
	28	----	----	59.25
	29	----	----	61.55
	30	----	----	63.85
27	3	6.35	8.25	
	4	7.30	9.60	
	5	8.15	11.00	
	6	9.05	12.50	
	7	10.00	14.10	
	8	11.10	15.65	
	9	12.20	17.25	
	10	13.35	18.90	
	11	14.60	20.60	
	12	15.90	22.20	
	13	17.25	24.00	
	14	18.60	25.80	
	15	----	27.70	
	16	----	29.60	
	17	----	31.55	
	18	----	33.55	
	19	----	35.50	
	20	----	37.50	43.10
	21	----	----	45.50
	22	----	----	47.95
	23	----	----	50.25
	24	----	----	52.55
	25	----	----	54.95
	26	----	----	57.35
27	27	----	----	59.70
	28	----		62.10
	29	----		64.65
	30	----		67.20
28	3	6.75	8.70	
	4	7.70	10.10	
	5	8.50	11.55	
	6	9.50	13.15	
	7	10.60	14.80	
	8	11.70	16.40	
	9	12.90	18.05	
	10	13.10	19.80	
	11	15.45	21.60	
	12	16.85	23.30	
	13	18.20	25.20	
	14	19.55	27.10	
	15	----	29.10	
	16	----	31.10	
	17	----	33.15	
	18	----	35.25	
	19	----	37.35	
	20	----	39.45	45.35
	21	----	----	47.80
	22	----	----	50.30
	23	----	----	52.70
	24	----	----	55.10
	25	----	----	57.55
	26	----	----	60.00
	27	----	----	62.50
	28	----	----	65.00
	29	----	----	67.50
	30	----	----	70.05
29	3	7.25	9.15	
	4	8.10	10.60	
	5	9.00	12.15	
	6	10.00	13.85	
	7	11.15	15.50	
	8	12.35	17.15	
	9	13.60	18.85	
	10	14.90	20.70	
	11	16.30	22.60	
	12	17.70	24.40	
	13	19.10	26.40	
	14	20.55	28.40	
	15	----	30.50	
	16	----	32.60	
	17	----	34.80	
	18	----	37.00	
	19	----	39.20	
	20	----	41.40	47.60
	21	----	----	50.10
	22	----	----	52.65
	23	----	----	55.15
	24	----	----	57.70
	25	----	----	60.25
	26	----	----	62.80
	27	----	----	65.30
	28	----	----	67.85
	29	----	----	70.40
	30	----	----	73.00
30	3	7.60	9.60	
	4	8.55	11.10	
	5	9.45	12.70	
	6	10.55	14.55	
	7	11.75	16.20	
	8	13.00	18.00	
	9	14.30	19.80	
	10	15.75	21.60	
	11	17.15	23.50	

Iron Pulleys—Continued.

Diam.	Face.	Single Belt.	Double Belt.	Double Arm, Double Belt.
30	12	18.60	25.50	----
	13	20.05	27.60	----
	14	21.55	29.70	----
	15	----	32.45	----
	16	----	34.20	----
	17	----	36.45	----
	18	----	38.70	----
	19	----	40.95	----
	20	----	43.25	49.75
	21	----	----	51.35
	22	----	----	54.95
	23	----	----	57.60
	24	----	----	60.25
	25	----	----	62.85
	26	----	----	65.45
	27	----	----	68.05
	28	----	----	70.70
	29	----	----	73.35
	30	----	----	76.00
31	3	8.05	10.00	----
	4	8.95	11.65	----
	5	9.85	13.40	----
	6	11.10	15.30	----
	7	12.35	17.10	----
	8	13.70	19.00	----
	9	15.10	21.50	----
	10	16.55	22.70	----
	11	18.05	24.70	----
	12	19.55	26.75	----
	13	21.05	28.95	----
	14	22.60	31.15	----
	15	----	33.45	----
	16	----	35.80	----
	17	----	38.15	----
	18	----	40.50	----
	19	----	42.90	----
	20	----	45.35	52.15
	21	--	----	54.75
	22	----	----	57.40
	23	----	----	60.10
	24	----	----	62.80
	25	----	----	65.50
	26	----	----	68.20
	27	----	----	70.90
	28	----	----	73.65
	29	----	----	76.40
	30	----	----	79.20
32	3	8.45	10.45	----
	4	9.40	12.20	----
	5	10.45	14.10	----
	6	11.65	16.05	----
	7	12.95	17.90	----
	8	14.40	19.85	----
	9	15.90	22.20	----
	10	17.40	23.85	----
	11	19.00	25.90	----
	12	20.55	28.00	----
	13	22.10	30.30	----
	14	23.70	32.65	----
	15	----	35.05	----
	16	----	37.45	----
	17	----	39.85	----
	18	----	42.30	----
	19	----	44.70	----
	20	----	47.15	54.50
	21	----	----	57.15
	22	---	----	59.80
	23	----	----	62.55
	24	----	----	65.35
	25	----	----	68.10
32	26	----	----	70.90
	27	----	----	73.75
	28	----	----	76.65
	29	----	----	79.50
	30	----	----	82.40
	32	----	----	88.15
33	3	8.90	11.00	----
	4	9.90	12.80	----
	5	11.00	14.80	----
	6	12.25	16.80	----
	7	13.60	18.80	----
	8	15.05	20.80	----
	9	16.70	22.85	----
	10	18.25	24.95	----
	11	19.90	27.10	----
	12	21.50	29.25	----
	13	23.15	31.65	----
	14	24.80	34.10	----
	15	----	36.55	----
	16	----	39.05	----
	17	----	41.55	----
	18	----	44 10	----
	19	----	46.60	----
	20	----	49.15	56.95
	21	----	----	59.60
	22	----	----	62.30
	23	----	----	65.10
	24	----	----	67.90
	25	----	----	70.80
	26	----	----	73.70
	27	----	----	76.65
	28	----	----	79.60
	29	----	----	82.00
	30	----	----	85.60
	32	----	---	91.75
34	3	9.40	11.60	----
	4	10.40	13.50	----
	5	11.50	15.50	----
	6	12.90	17.60	----
	7	14.35	19.70	----
	8	15.85	21.70	----
	9	17.55	23.85	----
	10	19.10	26.10	----
	11	20.85	28.30	----
	12	22.50	30.50	----
	13	24.20	33.05	----
	14	25.90	35.60	----
	15	----	38.15	----
	16	----	40.70	----
	17	----	43.30	----
	18	----	45.90	----
	19	----	48.75	----
	20	----	51.65	59.40
	21	----	----	62.00
	22	----	----	64.60
	23	----	----	67.55
	24	----	----	70.50
	25	----	----	73.45
	26	----	----	76.45
	27	----	----	79.50
	28	----	----	82.55
	29	----	----	85.60
	30	----	----	88.70
	32	----	----	94.90
35	3	9.90	12.30	----
	4	10.90	14.10	----
	5	12.10	16.20	----
	6	13.50	18.40	----
	7	15.00	20.60	----
35	8	16.60	22.75	----
	9	18.25	24.90	----
	10	19.95	27.20	----
	11	21.75	29.50	----
	12	23.50	31.80	----
	13	25.25	34.40	----
	14	27.00	37.05	----
	15	----	39.70	----
	16	----	42.35	----
	17	----	45.00	----
	18	----	47.70	----
	19	----	50.40	----
	20	----	53.10	61.80
	21	----	----	64.35
	22	----	----	66.95
	23	----	----	70.05
	24	----	----	73.20
	25	----	----	76.40
	26	----	----	79.60
	27	----	----	82.85
	28	----	----	86.10
	29	----	----	89.40
	30	----	----	92.70
	32	----	----	99.40
36	3	10.40	12.75	----
	4	11.40	14.75	----
	5	12.65	16.95	----
	6	14.10	19.20	----
	7	15.70	21.45	----
	8	17.35	23.10	----
	9	19.10	26.00	----
	10	20.85	28.30	----
	11	22.70	30.70	---
	12	24.50	33.10	----
	13	26.30	35.80	----
	14	28.10	38.55	----
	15	----	41.30	----
	16	----	44.05	----
	17	----	46.80	----
	18	----	49.55	----
	19	----	52.30	----
	20	----	55.05	64.30
	21	----	58.80	66.35
	22	----	61.55	69.45
	23	----	64.30	72.55
	24	----	67.05	75.70
	25	----	----	78.85
	26	----	----	82.00
	27	----	----	85.20
	28	----	----	88.45
	29	----	----	91.70
	30	----	----	94.95
	32	----	----	101.55
	34	----	----	108.25
	36	----	----	115.00
37	4	11.95	15.50	----
	5	13.25	17.95	----
	6	14.85	20.10	----
	7	16.80	22.45	----
	8	18.20	24.80	----
	9	20.00	27.15	----
	10	21.80	29.55	----
	11	23.70	32.00	----
	12	25.55	34.50	----
	13	27.40	37.30	----
	14	29.30	40.10	----
	15	----	42.90	----
	16	----	45.70	----
	17	----	48.60	----
	18	-- -	51.50	--
37	19	---	54.40	----
	20	----	57.30	66.50
	21	---	60.20	69.30
	22	----	63.10	72.10
	23	---	66.00	75.30
	24	----	68.90	78.55
	25	----	----	81.80
	26	--	----	85.10
	27	----	----	88.40
	28	----	----	91.75
	29	----	--	95.10
	30	----	----	98.50
	32	- --	----	105.20
	34	----	----	112.00
	36	----	----	118.80
38	4	12.55	16.25	----
	5	13.95	18.65	----
	6	15.60	21.05	----
	7	17.95	23.45	----
	8	20.25	25.90	----
	9	22.55	28.35	----
	10	24.85	30.80	----
	11	27.15	33.35	----
	12	29.45	35.95	----
	13	31.75	38.80	----
	14	34.05	41.65	----
	15	----	44.65	----
	16	----	47.65	----
	17	----	50.70	----
	18	----	53.70	----
	19	----	56.75	----
	20	----	59.80	68.75
	21	----	62.85	71.75
	22	----	65.90	74.80
	23	----	68.95	78.10
	24	----	72.00	81.45
	25	----	----	84.85
	26	- --	----	88.25
	27	----	----	91.70
	28	----	----	95.15
	29	----	----	98.60
	30	----	----	102.05
	32	----	----	109.00
	34	----	----	115.95
	36	----	----	123.00
39	4	13.10	17.00	----
	5	14.60	19.40	----
	6	16.35	21.95	----
	7	18.10	24.45	----
	8	19.95	27.00	----
	9	21.85	29.55	----
	10	23.75	32.10	----
	11	25.75	34.65	----
	12	27.80	37.25	----
	13	29.85	39.85	----
	14	31.90	42.45	----
	15	----	45.70	----
	16	----	49.00	----
	17	----	52.25	----
	18	----	55.50	----
	19	-- -	58.55	----
	20	-	61.60	71.00
	21	- -	64.65	74.20
	22	----	67.70	77.40
	23	----	70.75	80.85
	24	----	73.80	84.35
	25	- -	----	87.85
	26	----	----	91.35
	27	----	----	94.90
	28	----	- --	98.50

Iron Pulleys—Continued.

Diam.	Face.	Single Belt.	Double Belt.	Double Arm, Double Belt.
39	29	----	----	102.05
	30	----	----	105.60
	32	----	----	112.80
	34	----	----	120.00
	36	----	----	127.15
40	4	13.70	17.75	----
	5	15.30	20.30	----
	6	17.10	22.90	----
	7	18.90	25.50	----
	8	20.80	28.10	----
	9	22.75	30.70	----
	10	24.75	33.30	----
	11	26.80	36.05	----
	12	28.80	38.75	----
	13	30.85	41.75	----
	14	32.90	44.80	----
	15	----	47.85	----
	16	----	50.90	----
	17	----	54.20	----
	18	----	57.50	----
	19	----	60.60	----
	20	----	63.70	73.25
	21	----	66.70	76.65
	22	----	69.70	80.15
	23	----	72.80	83.70
	24	----	75.90	87.30
	25	----	----	90.90
	26	----	----	94.55
	27	----	----	97.70
	28	----	----	101.90
	29	----	----	105.50
	30	----	----	109.10
	32	----	----	116.60
	34	----	----	124.00
	36	----	----	131.35
	38	----	----	138.80
	40	----	----	146.20
41	4	14.30	18.55	----
	5	15.95	20.80	----
	6	17.85	23.80	----
	7	19.95	26.50	----
	8	22.05	29.20	----
	9	23.70	31.85	----
	10	25.70	34.55	----
	11	27.80	37.40	----
	12	29.90	40.20	----
	13	32.00	43.25	----
	14	34.10	46.35	----
	15	----	49.60	----
	16	----	52.85	----
	17	----	56.15	----
	18	----	59.50	----
	19	----	62.55	----
	20	----	65.65	75.50
	21	----	68.80	79.15
	22	----	72.00	82.80
	23	----	75.20	86.50
	24	----	78.45	90.20
	25	----	----	93.90
	26	----	----	97.65
	27	----	----	101.40
	28	----	----	105.20
	29	----	----	108.95
	30	----	----	112.75
	32	----	----	120.40
	34	----	----	127.95
	36	----	----	135.45
	38	----	----	143.15
	40	----	----	150.75
42	4	14.90	19.30	----
	5	16.70	22.05	----
	6	18.60	24.80	----
	7	20.55	27.55	----
	8	22.55	30.30	----
	9	24.60	33.05	----
	10	26.70	35.85	----
	11	28.85	38.75	----
	12	31.00	41.60	----
	13	33.15	44.75	----
	14	35.30	47.95	----
	15	----	51.15	----
	16	----	54.40	----
	17	----	57.70	----
	18	----	61.00	----
	19	----	64.30	----
	20	----	67.60	77.75
	21	----	70.95	81.60
	22	----	74.30	85.45
	23	----	77.65	89.30
	24	----	81.00	93.15
	25	----	----	97.00
	26	----	----	100.85
	27	----	----	104.70
	28	----	----	108.60
	29	----	----	112.50
	30	----	----	116.40
	32	----	----	124.20
	34	----	----	132.00
	36	----	----	139.80
	38	----	----	147.60
	40	----	----	155.40
43	4	15.55	20.15	----
	5	17.45	22.95	----
	6	19.40	25.80	----
	7	21.40	28.65	----
	8	23.50	31.50	----
	9	25.60	34.35	----
	10	27.75	37.25	----
	11	30.00	40.25	----
	12	32.20	43.25	----
	13	34.40	46.50	----
	14	36.60	49.25	----
	15	----	53.60	----
	16	----	56.45	----
	17	----	59.85	----
	18	----	63.25	----
	19	----	66.65	----
	20	----	70.05	80.55
	21	----	73.45	84.50
	22	----	76.90	88.45
	23	----	80.35	92.40
	24	----	83.80	96.35
	25	----	----	100.35
	26	----	----	104.35
	27	----	----	108.35
	28	----	----	112.35
	29	----	----	116.40
	30	----	----	120.40
	32	----	----	128.50
	34	----	----	136.50
	36	----	----	144.55
	38	----	----	152.65
	40	----	----	160.75
44	4	16.25	21.00	----
	5	18.20	23.90	----
	6	20.25	26.85	----
	7	22.30	29.75	----
	8	24.45	32.70	----
	9	26.60	35.65	----
	10	28.80	38.65	----
	11	31.10	41.80	----
	12	33.40	44.90	----
	13	35.65	48.25	----
	14	37.90	51.60	----
	15	----	55.05	----
	16	----	58.50	----
	17	----	62.00	----
	18	----	65.50	----
	19	----	69.00	----
	20	----	72.50	83.45
	21	----	76.00	87.40
	22	----	79.50	91.40
	23	----	73.05	95.50
	24	----	86.65	99.65
	25	----	----	103.75
	26	----	----	107.85
	27	----	----	110.95
	28	----	----	115.10
	29	----	----	119.75
	30	----	----	124.45
	32	----	----	132.80
	34	----	----	141.10
	36	----	----	149.40
	38	----	----	157.80
	40	----	----	166.15
45	4	16.95	21.90	----
	5	18.95	24.45	----
	6	21.05	27.85	----
	7	23.15	30.85	----
	8	25.40	33.90	----
	9	27.60	37.00	----
	10	29.85	40.10	----
	11	32.25	43.35	----
	12	34.60	46.55	----
	13	36.90	50.00	----
	14	39.25	53.45	----
	15	----	57.00	----
	16	----	60.55	----
	17	----	64.15	----
	18	----	67.75	----
	19	----	71.35	----
	20	----	74.95	86.20
	21	----	78.55	90.25
	22	----	82.15	94.35
	23	----	85.80	98.60
	24	----	89.45	102.85
	25	----	----	107.10
	26	----	----	111.35
	27	----	----	115.60
	28	----	----	120.90
	29	----	----	124.65
	30	----	----	128.45
	32	----	----	137.15
	34	----	----	145.80
	36	----	----	154.25
	38	----	----	162.95
	40	----	----	171.65
46	4	17.65	22.75	----
	5	19.70	25.80	----
	6	21.85	28.90	----
	7	24.05	32.00	----
	8	26.35	35.15	----
	9	28.60	38.35	----
	10	30.95	41.55	----
	11	33.40	44.90	----
	12	35.80	48.20	----
	13	38.20	51.75	----
	14	40.60	55.30	----
	15	43.15	58.95	----
	16	----	62.60	----
	17	----	66.30	----
	18	----	70.00	----
	19	----	73.70	----
	20	----	77.40	89.00
	21	----	81.10	92.25
	22	----	84.80	97.50
	23	----	88.55	101.80
	24	----	92.30	106.15
	25	----	----	110.50
	26	----	----	114.90
	27	----	----	119.30
	28	----	----	123.70
	29	----	----	128.10
	30	----	----	132.50
	32	----	----	141.45
	34	----	----	150.30
	36	----	----	159.15
	38	----	----	168.10
	40	----	----	177.00
47	4	18.30	23.60	----
	5	20.45	26.75	----
	6	22.70	29.95	----
	7	24.95	33.15	----
	8	27.30	36.40	----
	9	29.60	39.70	----
	10	32.05	43.00	----
	11	34.50	46.45	----
	12	37.00	49.85	----
	13	39.45	53.50	----
	14	41.95	57.15	----
	15	----	59.90	----
	16	----	64.65	----
	17	----	68.45	----
	18	----	72.25	----
	19	----	76.05	----
	20	----	79.85	91.80
	21	----	83.65	96.15
	22	----	87.45	100.55
	23	----	91.30	104.95
	24	----	95.15	109.40
	25	----	----	113.90
	26	----	----	118.40
	27	----	----	122.95
	28	----	----	127.50
	29	----	----	132.00
	30	----	----	136.55
	32	----	----	145.75
	34	----	----	154.90
	36	----	----	164.05
	38	----	----	173.30
	40	----	----	182.55
48	4	19.00	24.50	----
	5	21.20	27.70	----
	6	23.50	31.00	----
	7	25.85	34.30	----
	8	28.25	37.65	----
	9	30.65	41.05	----
	10	33.15	44.45	----
	11	35.70	48.00	----
	12	38.20	51.50	----
	13	40.75	55.25	----
	14	43.30	59.00	----
	15	----	62.85	----
	16	----	66.70	----
	17	----	70.60	----
	18	----	74.50	----

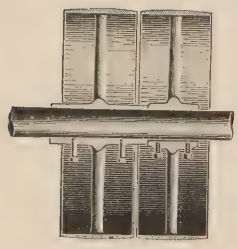
Larger sizes will be furnished or quoted on application.

Tight and Loose and Flange Cast Iron Pulleys.

Tight and Loose Pulleys.

These prices must be added

To the regular list prices for moulded cast iron pulleys.



TIGHT AND LOOSE PULLEYS.

Diameter in Inches.	Price.
3 to 8	1.60
8½ to 10	1.95
10½ to 12	2.30
12½ to 14	2.65
14½ to 16	3.00
16½ to 18	3.30
19 to 20	3.70
21 to 22	4.05
23 to 24	4.40
25 to 26	4.75
27 to 28	5.10
29 to 30	5.45
31 to 32	5.80
33 to 34	6.15
35 to 36	6.50
37 to 40	7.20

Diameter in Inches.	Price.
41 to 44	7.90
45 to 48	8.60
49 to 52	9.30
53 to 56	10.00
57 to 60	10.70
61 to 66	11.70
67 to 72	12.70
73 to 78	13.70
79 to 84	14.70
85 to 90	15.70
91 to 96	16.70
97 to 102	17.70
103 to 108	18.70
109 to 114	19.70
115 to 120	20.70

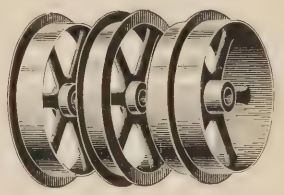
Finished Cast Iron Flange Pulleys made with One, Two or Three Flanges.

These prices must be added

To the regular list prices for moulded cast iron pulleys.

Diameter in Inches.	Price for Double Flange.
3 to 8	4.65
8½ to 10	5.20
10½ to 12	5.75
12½ to 14	6.30
14½ to 16	7.15
16½ to 18	8.00
19 to 20	8.80
21 to 22	9.90
23 to 24	11.00
25 to 26	12.10
27 to 28	13.75
29 to 30	15.40
31 to 32	17.05
33 to 34	18.70
35 to 36	20.35
37 to 40	23.10

Diameter in Inches.	Price for Double Flange.
41 to 44	26.40
45 to 48	29.70
49 to 52	33.00
53 to 56	36.30
57 to 60	40.70
61 to 66	46.20
67 to 72	51.70
73 to 78	57.20
79 to 84	62.70
85 to 90	68.20
91 to 96	73.70
97 to 102	79.70
103 to 108	85.80
109 to 114	91.30
115 to 120	96.80



FLANGE PULLEYS.

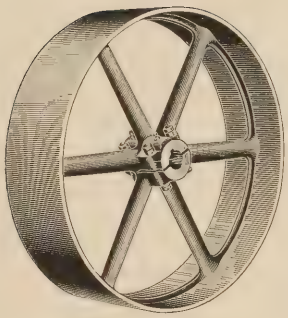
Pulleys with one flange only, one-half that given above.
Pulleys with three flanges, one-half more than given above.

Clamp Hub and Split Cast Iron Pulleys.

Clamp Hub Pulleys.

These prices must be added

To the regular list prices for moulded cast iron pulleys.



CLAMP HUB PULLEY.

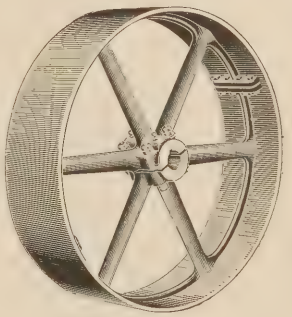
Diam in Inches.	Face in Inches.	Price.
6 to 10	Up to 3	.80
	above 3 to 6	1.05
	" 6 to 10	1.30
	" 10 to 14	1.85
10½ to 18	Up to 3	.90
	above 3 to 6	1.30
	" 6 to 10	1.70
	" 10 to 14	2.40
	" 14 to 18	3.15
19 to 23	Up to 4	1.60
	above 4 to 6	2.05
	" 6 to 10	2.45
	" 10 to 14	3.35
	" 14 to 20	4.40
	" 20 to 26	6.60
24 to 30	Up to 4	2.15
	above 4 to 6	2.65
	" 6 to 10	3.25
	" 10 to 14	4.35
	" 14 to 20	6.00
	" 20 to 30	8.40
31 to 36	Up to 4	2.70
	above 4 to 6	3.35
	" 6 to 10	4.05
	" 10 to 14	5.90
	" 14 to 20	7.80
31 to 36	above 20 to 36	11.40
37 to 47	Up to 4	3.90
	above 4 to 6	4.50
	" 6 to 10	5.95
	" 10 to 14	8.10
	" 14 to 20	10.80
	" 20 to 30	16.20
	" 30 to 40	22.20
48 to 60	Up to 6	6.00
	above 6 to 10	7.80
	" 10 to 14	10.80
	" 14 to 20	15.00
	" 20 to 30	20.70
	" 30 to 40	28.80
	" 40 to 50	39.00
61 to 84	Up to 10	12.00
	above 10 to 14	15.60
	" 14 to 20	21.00
	" 20 to 30	28.80
	" 30 to 40	38.40
	" 40 to 50	50.00
85 to 120	Up to 14	22.80
	above 14 to 20	32.10
	" 20 to 30	42 00
	" 30 to 40	54.00
	" 40 to 50	69.00
	" 50 to 60	88.00

Finished Split Pulleys.

These prices must be added

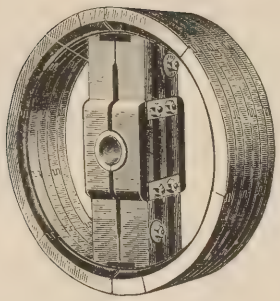
To the regular list prices for machine moulded cast iron pulleys.

Diam. in Inches.	Face in Inches.	Price.
6 to 10	Up to 3	1.30
	above 3 to 6	1.75
	" 6 to 10	2.15
	" 10 to 14	3.10
10½ to 18	Up to 3	1.50
	above 3 to 6	2.20
	" 6 to 10	2.85
	" 10 to 14	4.00
	" 14 to 18	5.25
19 to 23	Up to 4	2.65
	above 4 to 6	3.40
	" 6 to 10	4.05
	" 10 to 14	5.60
	" 14 to 20	7.30
	" 20 to 26	11.00
24 to 30	Up to 4	3.60
	above 4 to 6	4.40
	" 6 to 10	5.40
	" 10 to 14	7.25
	" 14 to 20	10.00
	" 20 to 30	14.00
31 to 36	Up to 4	4.50
	above 4 to 6	5.60
	" 6 to 10	6.75
	" 10 to 14	9.80
	" 14 to 20	13.00
31 to 36	above 20 to 36	19.00
37 to 47	Up to 4	6.50
	above 4 to 6	7.50
	" 6 to 10	9.90
	" 10 to 14	13.50
	" 14 to 20	18.00
	" 20 to 30	27.00
	" 30 to 40	37.00
48 to 60	Up to 6	10.00
	above 6 to 10	13.00
	" 10 to 14	18.00
	" 14 to 20	25.00
	" 20 to 30	34.50
	" 30 to 40	48.00
	" 40 to 50	63.00
61 to 84	Up to 10	20.00
	above 10 to 14	26.00
	" 14 to 20	35.00
	" 20 to 30	48.00
	" 30 to 40	64.00
	" 40 to 50	82.00
85 to 120	Up to 14	38.00
	above 14 to 20	53.50
	" 20 to 30	70.00
	" 30 to 40	90.00
	" 40 to 50	115.00
	" 50 to 60	150.00

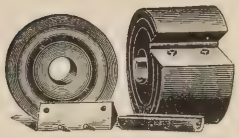


SPLIT PULLEY.

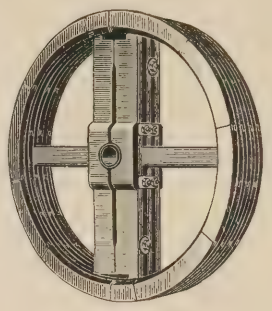
Wood Split Pulleys.



SINGLE ARM.



SOLID.



DOUBLE ARM.

Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.
3	2	1.80	7	2	2.20	11	4	3.25	15	7	5.00	20	6	6.40	26	16	20.40			
	3	1.90		3	2.30		5	3.50		8	5.45		7	7.00		18	23.30			
	4	2.00		4	2.45		6	3.75		9	5.90		8	7.60		20	26.30			
	5	2.10		5	2.65		7	4.00		10	6.35		9	8.30		22	29.50			
	6	2.25		6	2.85		8	4.30		11	6.80		10	9.00		24	32.70			
	7	2.40		7	3.10		9	4.65		12	7.30		11	9.70						
	8	2.60		8	3.35		10	5.00		13	7.80		12	10.40	28	4	7.80			
	9	2.85		9	3.60		11	5.40		14	8.40		13	11.20		5	8.60			
	10	3.10		10	3.85		12	5.80					14	12.00		6	9.50			
	11	3.35		11	4.15		13	6.20	16	3	3.80		15	12.90		7	10.50			
	12	3.60		12	4.50		14	6.60		4	4.15		16	13.80		8	11.60			
	13	3.85		13	4.85					5	4.50		18	15.60		9	12.80			
	14	4.10		14	5.20	12	3	3.15		6	5.00					10	14.00			
							4	3.40		7	5.50	22	4	5.60		11	15.20			
4	2	1.90	8	2	2.35		5	3.65		8	6.00		5	6.30		12	16.50			
	3	2.00		3	2.45		6	3.90		9	6.50		6	7.00		13	17.90			
	4	2.10		4	2.60		7	4.20		10	7.00		7	7.70		14	19.40			
	5	2.20		5	2.80		8	4.55		11	7.50		8	8.40		15	20.90			
	6	2.40		6	3.00		9	4.90		12	8.00		9	9.20		16	22.40			
	7	2.60		7	3.25		10	5.30		13	8.50		10	10.00		18	25.60			
	8	2.85		8	3.50		11	5.70		14	9.00		11	10.80		19	27.20			
	9	3.10		9	3.75		12	6.10		15	9.60		12	11.70		20	28.80			
	10	3.35		10	4.00		13	6.50					13	12.60		21	30.40			
	11	3.60		11	4.30		14	6.90	17	3	4.00		14	13.50		22	32.00			
	12	3.85		12	4.65					4	4.40		16	15.50		23	33.60			
	13	4.10		13	5.00	13	3	3.30		5	4.90		18	17.70		24	35.30			
	14	4.40		14	5.40		4	3.55		6	5.40									
							5	3.80		7	5.90	24	4	6.20	30	4	8.60			
5	2	2.00	9	3	2.60		6	4.10		8	6.40		5	7.00		5	9.50			
	3	2.10		4	2.80		7	4.45		9	6.90		6	7.80		6	10.60			
	4	2.20		5	3.00		8	4.80		10	7.40		7	8.60		7	11.80			
	5	2.40		6	3.25		9	5.20		11	7.90		8	9.40		8	13.00			
	6	2.60		7	3.50		10	5.60		12	8.40		9	10.30		9	14.30			
	7	2.85		8	3.75		11	6.00		13	8.90		10	11.20		10	15.60			
	8	3.10		9	4.00		12	6.40		14	9.50		11	12.10		11	17.00			
	9	3.35		10	4.30		13	6.80		15	10.20		12	13.00		12	18.50			
	10	3.60		11	4.65		14	7.30					13	14.10		13	20.00			
	11	3.85		12	5.00				18	3	4.20		14	15.20		14	21.50			
	12	4.10		13	5.40	14	3	3.45		4	4.70		16	17.70		16	25.00			
	13	4.40		14	5.80		4	3.70		5	5.20		18	20.20		18	28.50			
	14	4.75					5	4.00		6	5.70		20	22.80		20	32.00			
			10	3	2.80		6	4.35		7	6.20		22	25.40		22	35.50			
6	2	2.10		4	3.00		7	4.70		8	6.70		24	28.20		24	39.00			
	3	2.20		5	3.25		8	5.10		9	7.20									
	4	2.35		6	3.50		9	5.55		10	7.80	26	4	7.00	32	4	9.50			
	5	2.55		7	3.75		10	6.00		11	8.40		5	7.80		5	10.50			
	6	2.75		8	4.00		11	6.45		12	9.00		6	8.60		6	11.60			
	7	3.00		9	4.30		12	6.90		13	9.60		7	9.50		7	12.85			
	8	3.25		10	4.65		13	7.40		14	10.30		8	10.50		8	14.10			
	9	3.50		11	5.00		14	7.90		15	11.10		9	11.50		9	15.50			
	10	3.75		12	5.40					16	11.90		10	12.60		10	17.00			
	11	4.00		13	5.80	15	3	3.60		18	13.50		11	13.75		11	18.60			
	12	4.30		14	6.20		4	3.90					12	15.00		12	20.30			
	13	4.65					5	4.25	20	4	5.20		13	16.30		13	22.00			
	14	5.00	11	3	3.00		6	4.60		5	5.80		14	17.60		14	23.80			

Wood Split Pulleys—Continued.

Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.	Diam.	Face.	Price.
32	16	27.40	38	20	43.00	44	24	67.00	50	30	116.00	58	14	59.00	64	28	150.00
	18	31.00		22	48.00		26	76.00		36	151.00		16	67.00		30	164.00
	20	35.00		24	54.00		28	84.00					18	75.00		36	212.00
	22	39.00					30	94.00	52	8	34.00		20	85.00			
	24	43.00	40	5	15.70		36	125.00		9	36.00		22	95.00	66	8	52.00
				6	17.50					10	38.50		24	106.00		9	54.00
34	4	10.60		7	19.30	46	6	23.00		12	43.50		26	118.00		10	57.00
	5	11.80		8	21.25		7	25.00		14	49.00		28	130.00		12	64.00
	6	13.10		9	23.10		8	27.00		16	55.00		30	143.00		14	73.00
	7	14.45		10	25.00		9	29.00		18	62.00		36	185.00		16	83.00
	8	15.90		11	26.50		10	31.00		20	70.00					18	93.00
	9	17.40		12	28.00		12	36.00		22	80.00	60	8	45.00		20	103.00
	10	19.00		13	30.00		14	40.00		24	90.00		9	47.00		22	115.00
	11	20.70		14	32.00		16	45.00		26	100.00		10	49.00		24	129.00
	12	22.50		16	36.00		18	51.00		28	112.00		12	55.00		26	143 00
	13	24.20		18	41.00		20	57.00		30	124.00		14	62.00		28	158.00
	14	26.10		19	43.00		22	65.00		36	160.00		16	71.00		30	173.00
	16	29.80		20	46.00		24	73.00					18	80.00		36	222.00
	18	33.60		22	51.00		26	82.00	54	8	36.00		20	90.00			
	20	37.80		24	58.00		28	91.00		9	38.50		22	100.00	68	8	54.00
	22	42.20		26	65.00		30	101.00		10	41.20		24	112.00		9	56.00
	24	46.80		28	72.00		36	134.00		12	46.00		26	124.00		10	60.00
				30	80.00					14	52.00		28	136.00		12	68.00
36	4	11.70				48	6	25.00		16	59.00		30	149.00		14	77.00
	5	13.10	42	6	19.00		7	27.00		18	66.00		36	193.00		16	87.00
	6	14.60		7	21.00		8	29.00		20	75.00					18	97.00
	7	16.10		8	23.00		9	31.50		22	85.00	62	8	48.00		20	108.00
	8	17.70		9	25.00		10	33.90		24	95.00		9	50.00		22	120.00
	9	19.30		10	27.00		12	38.50		26	106.00		10	52.00		24	134.00
	10	21.00		12	31.00		14	43.00		28	118.00		12	58.00		26	150.00
	11	22.00		14	35.00		16	48.00		30	130.00		14	66.00		28	166.00
	12	24.00		16	39.00		18	54.00		36	168.00		16	75.00		30	182.00
	13	26.00		18	44.00		20	61.00					18	85.00		36	233.00
	14	28.00		20	49.00		22	70.00	56	8	39.00		20	95.00			
	16	32.00		22	55.00		24	78.00		9	41.00		22	106.00	70	8	56.00
	18	36.00		24	62.00		26	88.00		10	43.00		24	118.00		10	63.00
	20	40.00		26	70.00		28	98.00		12	49.00		26	130.00		12	71.00
	22	45.00		28	78.00		30	109.00		14	55.00		28	142.00		14	81.00
	24	50.00		30	87.00		36	142.00		16	63.00		30	156.00		16	91.00
				36	117.00					18	71.00		36	202.00		18	101.00
38	5	14.40				50	8	31.00		20	80.00					20	112 00
	6	16.00	44	6	21.00		9	33.70		22	90.00	64	8	50.00		22	125.00
	7	17.70		7	23.00		10	36.20		24	101.00		9	52.00		24	140.00
	8	19.50		8	25.00		12	41.00		26	112.00		10	55.00		26	157.00
	9	21.20		9	27.00		14	46.00		28	124.00		12	61.00		28	174.00
	10	23.00		10	29.00		16	51.00		30	136.00		14	69.00		30	191.00
	11	24.50		12	33.00		18	58.00		36	176.00		16	79.00		36	243.00
	12	26.00		14	37.00		20	65.00					18	89.00			
	13	28.00		16	42.00		22	75.00	58	8	42.00		20	99.00	72	8	58.00
	14	30.00		18	47.00		24	84.00		9	44.00		22	110.00		10	66.00
	16	34.00		20	53.00		26	94.00		10	46.00		24	123.00		12	75.00
	18	38.00		22	60.00		28	105.00		12	52.00		26	136.00		14	85.00

Larger sizes will be furnished or quoted on application.

Special Pulleys.

Cone Pulleys.



CONE PULLEY.

We are prepared to make Cone Pulleys with any number of steps of any diameter and width of face desired.

Prices will be the same as for a number of separate pulleys of the same diameter and width of face as the several steps of the Cone, plus fifty per cent., subject to the usual discount.

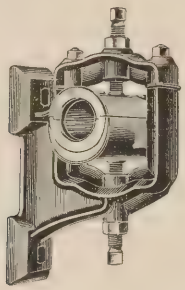
In ordering, state whether the Cone should be solid or split.

Flange Pulleys.

Pulleys are furnished with one, two, three or any number of flanges.

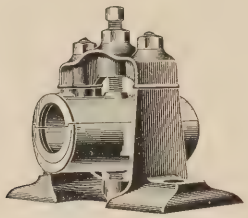
For prices of Flange Pulleys, add 15 per cent. to list for one flange, 20 per cent. for two flanges, 25 per cent. for three flanges, and discount in the regular manner.

Hangers, Pedestals, Pillow Blocks and Brackets.



ADJUSTABLE SELF-OILING POST HANGER.

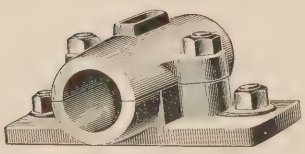
Diameter of Shaft.	Length of Bearing.	Distance from Foot to Center.	Price.
1 3/16	5	4	3.80
1 7/16	6	4 5/8	4.30
1 11/16	7	4 5/8	5.40
1 15/16	8	5 1/2	6.40
2 3/16	9	5 1/2	8.10
2 7/16	10	6 5/8	10.20
2 11/16	11	6 5/8	12.90
2 15/16	12	8 1/8	16.20
3 3/16	13	8 1/8	20.70
3 7/16	14	9 5/8	26.20
3 11/16	15	9 5/8	32.10
3 15/16	16	11	38.00
4 3/16	16	11	44.25
4 7/16	16	13 1/4	50.50
4 15/16	18	13 1/4	64.50
5 7/16	20	15 1/4	78.50



ADJUSTABLE SELF-OILING PEDESTAL.

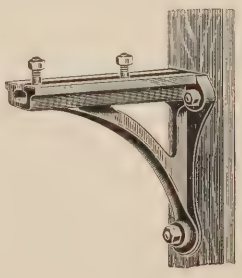
Diameter of Shaft.	Length of Bearing.	Price.	Diameter of Shaft.	Length of Bearing.	Price.
1 5/16	4	3.90	2 1/16	12	16.90
1 3/16	5	4.20	3 3/16	13	21.10
1 5/16	5	4.50	3 7/16	14	25.30
1 7/16	6	4.80	3 11/16	15	30.60
1 11/16	7	5.90	3 15/16	16	35.80
1 15/16	8	7.40	4 3/16	16	41.70
2 3/16	9	9.30	4 7/16	16	47.60
2 7/16	10	11.30	4 15/16	18	60.50
2 11/16	11	13.80	5 7/16	20	75.50

These Pedestals can be used as short drop hangers by inverting the box.



RIGID PILLOW BLOCK.

Diameter of Shaft.	Length of Bearing.	Price	Diameter of Shaft.	Length of Bearing.	Price.
1 5/16	3 1/8	1.30	3 11/16	12 1/4	10.10
1 3/16	4	1.60	3 15/16	13	11.50
1 7/16	4 3/4	2.00	4 3/16	14	13.25
1 11/16	5 3/4	2.65	4 7/16	15	15.00
1 15/16	6 3/8	3.35	4 15/16	18	19.00
2 3/16	7 1/4	4.00	5 7/16	19	23.50
2 7/16	8	4.80	5 15/16	20	28.50
2 11/16	9	5.65	6 7/16	20	34.00
2 15/16	9 3/4	6.70	6 15/16	20 1/4	40.00
3 3/16	10 1/2	7.75	7 7/16	21	47.00
3 7/16	11 1/2	8.90	7 15/16	22	55.00



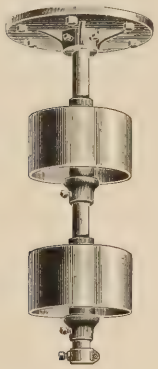
WALL BRACKETS.

With Bolts for Securing Pillow Blocks.

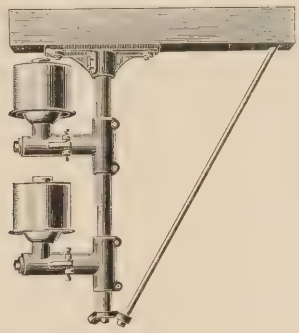
Designed for use when a greater distance from post to center of box is required than can be obtained by the use of the regular form of post hanger. Any style of box desired can be used upon them.

Diameter of Shaft.	Projection to Center of Shaft.	Price
1 5/16 to 1 11/16	18	5.50
	24	6.00
	30	6.50
1 15/16 to 3 3/16	18	10.20
	24	10.90
	30	11.60
3 7/16 to 4 7/16	18	18.60
	24	19.60
	30	20.60
4 15/16 to 5 15/16	18	26.60
	24	28.00
	30	29.50

Mule Pulley Stands and Drop Hangers.



STATIONARY MULE PULLEY STAND.

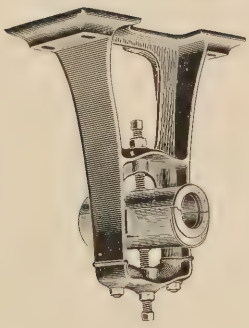


ADJUSTABLE MULE PULLEY STAND.

Width of Belt. Inch.	Size of Pulley. Inch.	Price.
2	10 x 3	22.50
3	10 x 4	25.00
4	12 x 5	30.00
5	12 x 6	32.00
6	16 x 7	37.50
7	16 x 8	40.00
8	24 x 10	45.00
10	24 x 12	55.00
12	30 x 14	60.00

Width of Belt. Inch.	Size of Pulley. Inch.	Price.
4	12 x 5	60.00
5	12 x 6	62.00
6	16 x 7	65.00
7	16 x 8	68.00
8	24 x 10	72.00
10	24 x 12	75.00
12	30 x 14	100.00

Adjustable Double Braced Self-Oiling Drop Hangers.



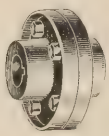
DROP HANGER,
Boxes Interchangeable.

Length of Bearing.	Diameter Shafting.	Range of Drop in Inches: 6 to 8	8½ to 10	10½ to 12	12½ to 14	14½ to 16	16½ to 18	18½ to 20	20½ to 22
4	1 5/16	3.20	3.65	4.30	4.90	5.35	5.70	6.00	6.10
5	1 3/16	3.85	4.30	4.70	5.20	5.60	6.00	6.15	6.25
5	1 5/16	4.15	4.60	5.10	5.60	5.90	6.10	6.30	6.50
6	1 7/16	4.50	4.95	5.35	5.85	6.25	6.40	6.70	6.90
7	1 11/16	5.20	5.60	6.00	6.50	6.90	7.00	7.30	7.50

Length of Bearing.	Diameter Shafting.	Range of Drop in Inches: 7 to 9	10 to 12	13 to 15	16 to 18	19 to 21	22 to 24	25 to 27	28 to 30
8	1 15/16	6.95	7.60	8.25	8.90	9.55	10.20	10.85	11.70
9	2 3/16	8.45	9.35	10.15	10.80	11.50	12.50	13.40	14.25
10	2 7/16	10.55	11.20	12.00	13.00	14.00	15.10	16.10	17.85
11	2 11/16	13.15	13.80	15.35	16.00	16.90	18.30	20.15	22.75
12	2 15/16	15.60	16.75	18.05	19.25	20.15	21.80	23.40	26.30
13	3 3/16	17.00	19.80	21.20	22.40	23.40	25.35	26.95	29.90
14	3 7/16	----	25.35	27.30	28.90	30.20	32.50	34.45	37.70
16	3 15/16	----	31.20	33.15	34.80	36.10	38.35	40.95	42.90
16	4 7/16	----	42.25	42.90	43.85	45.50	47.45	50.05	53.30
18	4 15/16	----	46.80	48.75	51.00	53.95	57.85	63.05	68.90

These Hangers are readily convertible into floor stands by simply inverting the boxes.

Shaft Couplings and Collars.



FLANGE-FACED OR PLATE COUPLINGS.

Diameter of Shaft.	Price per Pair. Fitted to Shaft.	Not fitted to Shaft.
1 3/16	7.00	4.00
1 7/16	8.00	5.00
1 11/16	8.50	5.50
1 15/16	9.00	6.00
2 3/16	10.50	7.00
2 7/16	12.50	8.50
2 11/16	15.25	10.75
2 15/16	18.25	13.25
3 3/16	21.75	15.25
3 7/16	25.25	18.25
3 11/16	29.25	21.25
3 15/16	33.25	24.75
4 7/16	43.25	34.25
4 15/16	54.75	44.25
5 7/16	67.00	53.50
5 15/16	81.00	64.00
6 7/16	95.50	78.50
6 15/16	110.00	92.00
7 7/16	126.00	107.50
7 15/16	142.00	123.00
8 7/16	160.00	140.50
8 15/16	180.00	160.00
9 7/16	200.00	180.00

REDUCTION FLANGED-FACED COUPLINGS.—When shafts of different diameters are connected with couplings of this kind, price of the pair will be the same as if both shafts were of the larger diameter.



COMPRESSION COUPLINGS.

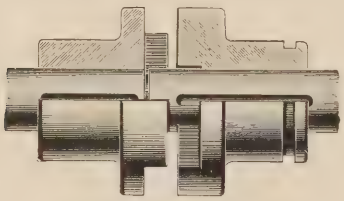
Diameter of Shaft.	Price.	Diameter of Shaft.	Price.
15/16	5.00	3 3/16	20.00
1 3/16	5.50	3 7/16	24.00
1 5/16	5.70	3 11/16	28.00
1 7/16	6.00	3 15/16	32.00
1 11/16	7.00	4 7/16	42.00
1 15/16	8.00	4 15/16	53.00
2 3/16	9.00	5 7/16	65.00
2 7/16	10.75	5 15/16	78.00
2 11/16	13.00	6 7/16	90.00
2 15/16	16.50	6 15/16	112.00

REDUCTION COMPRESSION COUPLINGS.—For connecting shafts of different diameters, same price as plain compression couplings for shafting of the larger size.



SLEEVE COUPLINGS.

Diameter of Shaft.	Price.	Diameter of Shaft.	Price.
3/4	3.00	1 7/16	5.00
1	3.75	1 11/16	5.60
1 3/16	4.40	1 15/16	6.25



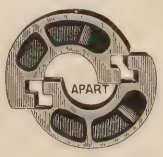
CRAB CLUTCH COUPLINGS.

Diameter of Shaft.	Price per Pair. Fitted to Shafts.	Not fitted to Shafts.
15/16	11.00	8.00
1 3/16	11.50	8.50
1 5/16	12.50	9.00
1 7/16	13.50	9.50
1 11/16	14.25	10.00
1 15/16	15.00	10.50
2 3/16	16.50	12.00
2 7/16	18.75	14.25
2 11/16	23.25	18.50
2 15/16	27.75	22.75
3 7/16	37.50	30.00
3 15/16	48.75	39.00
4 7/16	62.70	52.00
4 15/16	78.30	65.70
5 7/16	96.60	80.40
5 15/16	117.60	97.20
6 7/16	126.60	114.60
7	156.00	132.00
7 1/2	175.20	151.20
8	194.40	170.40



SOLID COLLARS.

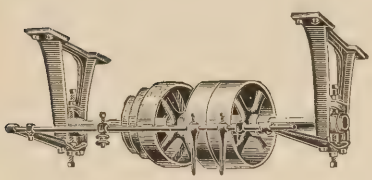
Diameter of Shaft.	Price Solid Collar.
15/16	.70
1 3/16	.80
1 5/16	.90
1 7/16	1.00
1 11/16	1.20
1 15/16	1.40
2 3/16	1.60
2 7/16	1.80
2 11/16	2.10
2 15/16	2.40
3 3/16	2.70
3 7/16	3.00
3 11/16	3.30
3 15/16	3.60
4 7/16	4.70
4 15/16	5.90
5 7/16	7.20
5 15/16	8.60
6 7/16	10.10
6 15/16	12.70



SPLIT COLLARS.

Diameter of Shaft.	Price Split Collar.
15/16	1.00
1 3/16	1.20
1 5/16	1.35
1 7/16	1.50
1 11/16	1.80
1 15/16	2.10
2 3/16	2.40
2 7/16	2.70
2 11/16	3.15
2 15/16	3.60
3 3/16	4.00
3 7/16	4.50
3 11/16	4.95
3 15/16	5.40
4 7/16	6.00
4 15/16	7.35
5 7/16	10.80
5 15/16	12.90
6 7/16	15.15
6 15/16	19.00

Shifting Fixtures, Clamps, Wall Boxes and Plates.









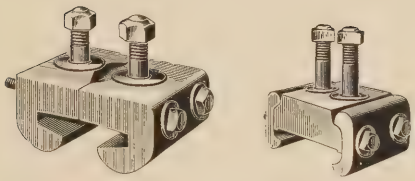




SHIFTING FIXTURES FOR COUNTER-SHAFT HANGERS.

These attachments can be added to any style of Hanger that may be desired.

Size.	Complete Attachment.	Fixtures without Arms.	Price, per Arm.
$\frac{15}{16}$ to $1\frac{5}{16}$	4.50	2.50	1.00
$1\frac{3}{8}$ to $1\frac{3}{4}$	5.00	2.50	1.30
$1\frac{13}{16}$ to $2\frac{5}{16}$	6.00	2.50	1.80
$2\frac{3}{8}$ to $2\frac{11}{16}$	7.40	2.50	2.50
$2\frac{3}{4}$ to $3\frac{3}{16}$	9.40	2.50	3.50
$3\frac{1}{4}$ to $3\frac{11}{16}$	10.40	2.50	5.00

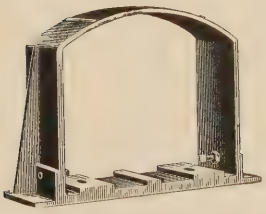


BEAM CLAMPS.

Beam Clamps.

Made to fit all sizes of I Beams.

Each 3.00



WALL FRAMES OR BOXES.

Diam. of Shaft.	Price.	Diam. of Shaft.	Price.
$1\frac{3}{16}$	6.50	$3\frac{7}{16}$	21.50
$1\frac{7}{16}$	7.00	$3\frac{11}{16}$	24.00
$1\frac{11}{16}$	7.50	$3\frac{15}{16}$	27.50
$1\frac{1}{16}$	9.00	$4\frac{7}{16}$	31.50
$2\frac{3}{16}$	10.50	$4\frac{15}{16}$	35.50
$2\frac{7}{16}$	12.00	$5\frac{7}{16}$	43.50
$2\frac{11}{16}$	13.50	$5\frac{15}{16}$	50.00
$2\frac{15}{16}$	16.00	$6\frac{7}{16}$	55.00
$3\frac{3}{16}$	19.00	$6\frac{15}{16}$	60.00



SOLE OR BASE PLATES.

Diam. of Shaft.	Price.	Diam. of Shaft.	Price.
$1\frac{3}{16}$	2.50	$3\frac{11}{16}$	9.20
$1\frac{7}{16}$	3.00	$3\frac{15}{16}$	11.00
$1\frac{11}{16}$	3.50	$4\frac{7}{16}$	14.60
$1\frac{15}{16}$	4.00	$4\frac{15}{16}$	22.00
$2\frac{3}{16}$	4.50	$5\frac{7}{16}$	23.50
$2\frac{7}{16}$	5.00	$5\frac{15}{16}$	25.00
$2\frac{11}{16}$	5.50	$6\frac{7}{16}$	27.00
$2\frac{15}{16}$	7.70	$6\frac{15}{16}$	28.50
$3\frac{3}{16}$	8.20	$7\frac{7}{16}$	31.00
$3\frac{7}{16}$	8.70	$7\frac{15}{16}$	33.20

Leather Belting.



Leather Belt.

Width. Inches.	Per Running Foot.	Width. Inches.	Per Running Foot	Width. Inches.	Per Running Foot.
½	.10	6	1.32	25	5.50
⅝	.12	6½	1.43	26	5.72
¾	.14	7	1.54	27	5.94
⅞	.16	8	1.76	28	6.16
1	.17	9	1.98	30	6.60
1¼	.23	10	2.20	32	7.04
1½	.29	11	2.42	34	7.48
1¾	.35	12	2.64	36	7.92
2	.41	13	2.86	38	8.36
2¼	.47	14	3.08	40	8.80
2½	.53	15	3.30	44	9.68
2¾	.59	16	3.52	48	10.56
3	.64	17	3.74	52	11.44
3¼	.70	18	3.96	56	12.32
3½	.76	19	4.18	60	13.20
3¾	.82	20	4.40	64	14.08
4	.87	21	4.62	68	14.96
4½	.98	22	4.84	72	15.84
5	1.09	23	5.06		
5½	1.21	24	5.28		

Double Belts twice the price of single. Extra Heavy Belts extra prices.

Round Belts.

Solid.		Twist.			
⅛ inch	.05	⅛ inch	.06	½ inch	.30
3/16 "	.07	3/16 "	.10	⅝ "	.36
¼ "	.10	¼ "	.14	¾ "	.46
5/16 "	.14	5/16 "	.18	⅞ "	.60
⅜ "	.18	⅜ "	.22	1 "	.72



Raw Hide and Tanned Cut Lace.

¼ inch, per 100 feet	1.00	½ inch, per 100 feet	2.00
5/16 " " "	1.25	⅝ " " "	2.75
⅜ " " "	1.50	¾ " " "	3.25
7/16 " " "	1.75	1 " " "	4.50

Southwick Wire Belt Lacing.

No. 0. Size for Single Belts, 3 inches and under.
" 1. " " " 3 " " over.
" 2. " all D. L. Belts under 12 inches.
" 3. " " " over 12 "

All sizes sold at 2.00 per 100 feet.

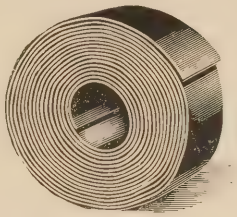


Belt Punch, 3/32 Tube ..... .50
Plyers and Cutters (Bernard's), 5½ inches 1.25
Gouge ..... .50

Double Belts should be grooved (on the pulley side) to allow the wire to countersink and prevent wear from contact with the pulley, as shown in cut.



Rubber Belting.



Rubber Belt.

Width in Inches.	2-ply.	3-ply.	4-ply.	5-ply.	6-ply.	7-ply.	8-ply.
1	.07	.09	.11	----	----	----	----
1¼	.09	.11	.14	----	----	----	----
1½	.11	.13	.16	----	----	----	----
2	.15	.17	.21	.26	.32	----	----
2½	.18	.22	.26	.32	.39	----	----
3	.22	.26	.31	.38	.46	----	----
3½	.26	.30	.37	.46	.56	----	----
4	.30	.34	.42	.52	.63	----	----
4½	.33	.39	.47	.58	.71	----	----
5	.36	.43	.52	.65	.78	----	----
6	.43	.52	.62	.77	.93	1.09	1.24
7	.51	.60	.73	.91	1.09	1.27	1.46
8	.59	.70	.84	1.05	1.26	1.47	1.68
9	.67	.80	.95	1.18	1.42	1.67	1.90
10	.75	.90	1.07	1.33	1.60	1.87	2.14
11	.83	1.00	1.18	1.47	1.77	2.06	2.36
12	.91	1.08	1.30	1.62	1.95	2.27	2.60
13	1.00	1.18	1.42	1.77	2.13	2.48	2.84
14	1.08	1.28	1.54	1.92	2.31	2.69	3.08
15	1.16	1.38	1.66	2.07	2.49	2.90	3.32
16	1.25	1.50	1.78	2.22	2.67	3.11	3.56
18	1.41	1.70	2.02	2.52	3.03	3.53	4.04
20	1.58	1.90	2.26	2.82	3.39	3.95	4.52
22	1.76	2.12	2.52	3.15	3.78	4.41	5.04
24	1.96	2.36	2.80	3.50	4.20	4.90	5.60
26	2.15	2.60	3.08	3.85	4.62	5.39	6.16
28	2.35	2.84	3.36	4.20	5.04	5.88	6.72
30	2.55	3.10	3.64	4.55	5.46	6.37	7.28
32	2.75	3.35	3.92	4.90	5.88	6.86	7.84
34	2.95	3.60	4.20	5.25	6.30	7.35	8.40
36	3.15	3.85	4.48	5.60	6.72	7.84	8.96
38	3.35	4.10	4.76	5.95	7.14	8.33	9.52
40	3.65	4.35	5.04	6.30	7.56	8.82	10.08
42	3.75	4.60	5.32	6.65	7.98	9.31	10.64
44	3.95	4.85	5.60	7.00	8 40	9.80	11.20
46	4.15	5.10	5.88	7.35	8.82	10.29	11.76
48	4.35	5.35	6.16	7.70	9.24	10.78	12.32
50	----	----	6.44	8.05	9.66	11.27	12.88
52	----	----	6.72	8.40	10.08	11.76	13.44
54	----	----	7.00	8.75	10.50	12.25	14.00
56	---	----	7.28	9.10	10.92	12.74	14.56
58	----	----	7.56	9.45	11.34	13.23	15.12
60	----	----	7.84	9.80	11.76	13.72	15.68

Endless Belts.



ENDLESS RUBBER BELT.

In putting belts on the pulleys the ends are not always properly squared and laced, the result being that they do not run straight and smooth, often failing to give reasonable service. Therefore large belts, which are to perform unusually severe work, should be made endless. In the manufacture of endless belts to order, the splice is formed before vulcanizing. The ends are brought together, the layers of duck being overlapped in steps, cemented, stitched, covered with rubber, and vulcanized between hydraulic plates. When properly made in this manner the splice is as strong as the solid part of the belt.

In ordering endless belts carefully follow these instructions:

Use a steel tape (other kinds are not reliable) drawn tightly.

Give distance around pulleys.

Give distance from center to center of shafts.

Give diameters of large and small pulleys.

Give width of pulley, number of plies and grade.

Measurements being given as above, proper allowance is made for stretch; but we cannot be held responsible for incorrect measurements furnished.

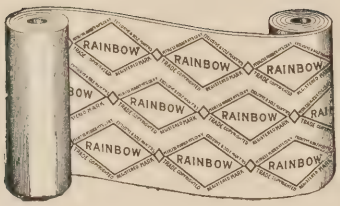
For making belts endless three extra feet are charged, to cover the cost of splice.

Never allow animal or mineral oils or grease to come in contact with rubber belting; they are injurious.

When from accumulation of dust, or other causes, a rubber belt slips, moisten it lightly on the inner side with boiled linseed oil.

Sheet Packing.

Rainbow Sheet Packing.



RAINBOW SHEET PACKING.

Especially adapted for very high pressures; is not affected by any degree of steam heat. Will not harden or blow out under the highest pressure; not affected by oils, ammonia, liquor or alkalies. Adapted for expansion or superheated steam joints, or for air and hot or cold water. Made in rolls about 200 lbs. each, 36 inches wide and in thicknesses $\frac{1}{32}$, $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$.

Price, per pound 1.00

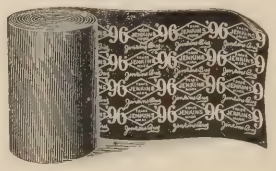
Jenkins' Standard '96 Packing.

Can be placed in a joint either hot or cold, and will make joint instantly. Full steam pressure can he turned on at once. Does not require to be followed up, and will not blow out. Made in sheet one yard wide.

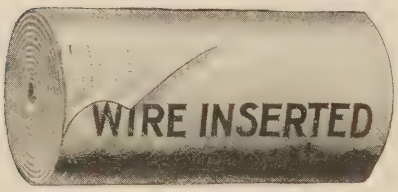
Thickness	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$
Weight, per square yard, pounds	$2\frac{3}{4}$	$5\frac{1}{2}$	$8\frac{1}{4}$	11	$16\frac{1}{2}$	$22\frac{1}{2}$

Special sizes can be made to order.

Price, per pound ..... .80



JENKINS' '96 SHEET PACKING.



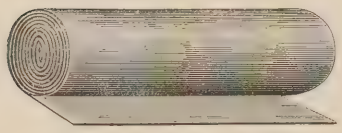
WIRE INSERTION RAINBOW SHEET PACKING.

Rainbow Rubber Sheet Packing with Wire Insertion.

Made in thicknesses $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$ inch.

Price, per pound 1.50

Cloth Insertion Sheet Packing, Cloth on One or Both Sides.


CLOTH INSERTION SHEET PACKING.

Thickness.	1-Ply.	2-Ply.	3-Ply.	4-Ply.
$\frac{1}{32}$ inch, per pound	.70	----	----	----
$\frac{1}{32}$ "	.65	----	----	----
$\frac{1}{16}$ "	.60	.63	.66	----
$\frac{3}{32}$ "	.55	.58	.61	----
$\frac{1}{8}$ "	----	.55	.58	.61
$\frac{3}{16}$ "	----	----	.55	.58
$\frac{1}{4}$ "	----	----	----	.55

Red Sheet and Usudurian Packing.



RED SHEET PACKING.

Made in the following thickness:

$\frac{1}{32}$, $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$.

Red Sheet Packing, per lb ..... .80
Usudurian " ..... .85



USUDURIAN SHEET PACKING.

Packings.





ECLIPSE SECTIONAL RAINBOW GASKET.

All pieces, no matter how small, can be formed on the metal tubes into a sectional gasket, as shown in cut. The Eclipse Gasket can be readily fitted to any size man or hand hole plate in use, and a perfectly tight joint guaranteed. Will not harden under any degree of heat, or blow out under highest pressure. Can be removed and replaced repeatedly. Put up in boxes weighing 5 to 6 pounds. Directions, extra metal tubes and a roll of gummed tape, for wrapping seam spirally, accompany each.

Length and weight per box.

Diameter, inches	3/8	1/2	5/8	3/4	7/8	1
Length per Box, feet	36	36	24	18	12	12
Weight, " pounds	3 1/4	5 1/4	6	5 3/4	5 1/2	7

1/4 and 3/8 for pipe unions, 1/2 inch for hand hole plates, 5/8 and 3/4 inch for manhole plates, 7/8 and 1 inch for extra large manhole plates.

Price, per pound 1.00

A special size of 1/4-inch Eclipse, 48 feet in box, weight about 1 pound, price per pound 2.00



PEERLESS SQUARE BRAIDED FLAX PACKING.

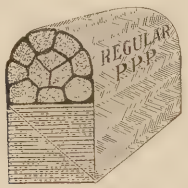
Peerless Square Braided Flax Packing.

A strictly high-grade packing and recommended as the best of its class.

Lengths and weights.

Diameter	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
Length per Box, feet	144	64	24	20	18	14	12	15	13
Weight " pounds	5	5	4	5	5	5	5	10	10

Price, per pound ..... .60



REGULAR P. P. P. PACKING.



SPECIAL P. P. P. PACKING.

P. P. P. Packing is made in two grades.

First, what we term "Regular," which is for steam pressures of about 100 pounds, or less; ordinary water pressures, warm or cold; low ammonia pressures, valve stems, etc.

Price, per pound 1.00

Second, "Special," for steam pressures above 100 pounds, up to 250 pounds; high ammonia pressures; high hydraulics, hot water, valve stems, etc.

Price, per pound 1.25

Both grades are made in sizes beginning with 3/16 of an inch, and advancing in size by 1/16 of an inch up to 1 1/4 inches, and from 1 1/4 inches advancing by 1/8 of an inch up to 3 inches.

When wanted for ammonia rods so specify in ordering, as ammonia packing is specially prepared for that purpose. While either the Regular or Special will do the work, the Special, prepared for ammonia, will give more satisfactory results.

It is made in any length. Boxes of the smaller sizes contain from 20 to 50 feet, and weigh about 5 pounds. The larger sizes run about 12 feet to the box, weighing about 7 to 10 pounds. It is twice as wide as it is thick.

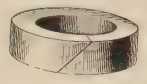
Jenkins Valve Stem Packing.



No. 1.



No. 2.



No. 3.

The composition of which it is composed makes it desirable for the stuffing-boxes of valves used on steam, oil, acid, gas or water. It gives perfect satisfaction on naphtha pumps.

Manufactured in square strips for the plungers of hot water pumps.

Coils $\frac{1}{8}$ inch thick are suitable for $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$-inch valves.
" $\frac{3}{16}$ " " " " " $\frac{3}{4}$ and 1-inch valves.
" $\frac{1}{4}$ " " " " " $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch valves.

To apply: first, having cut the end of the coil at an angle, spring it around the spindle once; then cut a corresponding angle, as shown in cut No. 2, between the dotted lines at the lap; then spring the packing back, and the ring is ready to put in the stuffing-box, as shown in No. 3. Screw the nut down until there is no leak.

Price, per pound 1.00



EUREKA PACKING made in all sizes from $\frac{1}{4}$ inch by 16ths up to 2 inches. Boxes contain 5 pounds, 10 pounds or 20 pounds, as may be desired. Bales of 25, 50 and 100 pounds.

Price, per pound ..... .60

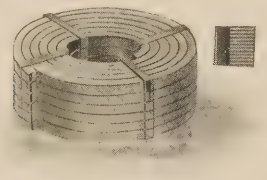
Tuck's Packings.



TUCK'S ROUND PACKING.

Made in all sizes from $\frac{1}{4}$ inch in diameter and larger. In lengths of 12 feet.

Price, per pound ..... .85



CANVAS RUBBER BACK PACKING.

Same as Standard Piston Packing, with the addition of a rubber back.

Price, per pound 1.00



TUCK'S PISTON PACKING.

Made of alternate layers of duck and rubber. In lengths of 12 feet, in all sizes from $\frac{1}{4}$-inch square and larger.

Price, per pound ..... .85

Special Canvas Pump Packing.

Above cut also illustrates our Special Canvas Pump Packing, made on same principle as the Piston, the difference being the quality of duck used, as well as a white friction. In lengths of 12 feet. Sizes $\frac{1}{4}$-inch square and larger.

Price, per pound 1.00

Garlock Packings.



ELASTIC RING PACKING

Is made in rings an exact fit to the rod and box, and is subjected to a perfect lubricating process. Is made any size from $\frac{5}{8}$ to 30 inches. Furnished to order only.

Price, per pound..... 1.20



EXTRA RING PACKING.

Prepared and treated especially for packing ammonia joints.

No. 334. Elastic Ring.
" 337. Sectional Ring.
" 778. Spiral Ring.

Made in both elastic and sectional styles. Rod and box measurements must be very close—even to $\frac{1}{64}$ inch. Recommended as the best article obtainable in Ring Packing.

Price, per pound..... 1.60



WATERPROOF HYDRAULIC PACKING. COLD WATER.

For water ends of pistons, plungers, hydraulic elevators, etc. Furnished on rod and stuffing box measurements only, and in either coil, spiral or ring form.

No. 99. Waterproof Hyd. Ring.
" 92. " " Spiral.
" 90. " " Coil.

Price, per pound..... 1.25

Hydraulic Ring Packing for Hot Water Pump Cylinders.

(NOT ILLUSTRATED.)

Sizes must be exact, as rings are very rigid.

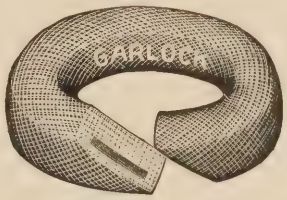
No. 260. Price, per pound.. 1.50



SECTIONAL RING PACKING

Is positively automatic, therefore the glands serve only to hold the packing in the box, while the pressure from the cylinder forces the sections together, making it impossible for any steam, water or gas to escape. Especially adapted for cut rods, flat-bottom stuffing boxes and places difficult to keep tight. Only suitable where rim of packing is quite heavy.

Price, per pound..... 1.20



HIGH PRESSURE PACKING.

For marine work, very high steam on main piston rods and valve stems, acids, rods running in oil or grease, engine valve stems and stop valves. Specially adapted for high speed.

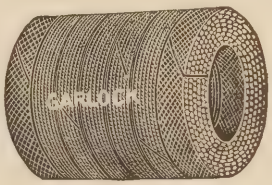
Price, per pound..... 2.00



SPIRAL PACKING.

Practically the same as Garlock Ring Packing, and can be carried in stock. Being made in the form of a continuous ring, is already shaped to the rod and box. In ordering give only exact space between rod and stuffing box. Made in sizes $\frac{1}{8}$-inch to 2-inch.

Price, per pound..... 1.20



DUO PACKING.

For high steam, flat-bottom boxes, rods not running true, dryers, mangles, air compressors, rock drills and expansion joints. Positively automatic and recommended for rods giving trouble.

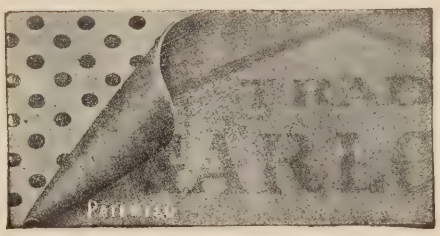
Price, per pound 1.30



GARLOCK GASKETS.

For manholes, handholes, flanges, etc. In ordering give inside measurements with width of rim and thickness.

Price, per pound..... .75

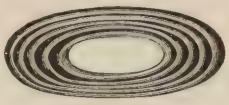


PERFORATED METAL INSERTED SHEET.

Guaranteed to hold any joint. For high pressure steam, hot oil, hot water, ammonia, etc. Conforms to uneven surfaces.

Prices on application.

Corrugated Copper Gaskets.



CORRUGATED COPPER GASKET.

This metallic Gasket may be used in place of rubber or other destructible materials in general use for packing. It consists of thin sheet copper, stamped with concentric corrugations. Three to six corrugations are all that are necessary, so that the space within the bolt holes usually determines the width of the Gasket. In cases where the flanges are thin, and for this reason liable to bend when the bolts are tightened, it is advisable to extend the copper Gasket to the full width of flange. This will, of course, require the cutting of bolt holes in the Gasket.

Connections made with these Gaskets will not blow out after continued use, for each corrugation makes the entire circle of the flange, and so long as the contact is kept complete by compression the joint cannot leak. The Gasket never blows out like rubber. It may be put in place while steam is leaking through valve. Answers well on pipes in which steam is alternately on and off, for it is not impaired by the repeated expansion and contraction.

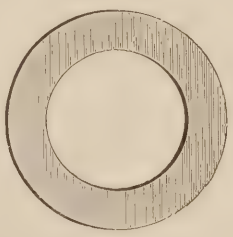
Inch.	Price.	Inch.	Price.	Inch.	Price.	Inch.	Price.
1/2	.004	2 3/8	.09	4 5/8	.34	7 3/4	.94
9/16	.005	2 1/2	.10	4 3/4	.35	8	1.01
5/8	.006	2 5/8	.11	4 7/8	.37	8 1/4	1.07
11/16	.007	2 3/4	.12	5	.39	8 1/2	1.13
3/4	.009	2 7/8	.13	5 1/8	.41	8 3/4	1.20
13/16	.01	3	.14	5 1/4	.43	9	1.27
7/8	.012	3 1/8	.15	5 3/8	.45	9 1/4	1.34
15/16	.014	3 1/4	.17	5 1/2	.48	9 1/2	1.42
1	.016	3 3/8	.18	5 5/8	.50	9 3/4	1.49
1 1/8	.02	3 1/2	.19	5 3/4	.52	10	1.57
1 1/4	.025	3 5/8	.21	5 7/8	.54	10 1/4	1.65
1 3/8	.03	3 3/4	.22	6	.57	10 1/2	1.73
1 1/2	.035	3 7/8	.24	6 1/4	.61	10 3/4	1.82
1 5/8	.04	4	.25	6 1/2	.66	11	1.90
1 3/4	.05	4 1/8	.27	6 3/4	.72	11 1/4	1.99
1 7/8	.055	4 1/4	.28	7	.77	11 1/2	2.08
2	.06	4 3/8	.30	7 1/4	.83	11 3/4	2.17
2 1/8	.07	4 1/2	.32	7 1/2	.88	12	2.26
2 1/4	.08						

The prices given above are for solid Gaskets on basis two cents per square inch surface.

The difference between price of outside and inside diameters will be the price of required Gasket.

Example for Gasket 10 x 5 inch, i. e.: 10 inch solid Gasket cost 1.57; 5 inch solid Gasket cost 39 cents—difference 1.18 for one 10 x 5 inch Gasket.

Common Sense Metallic Joint Gaskets.



COMMON SENSE METALLIC JOINT GASKET.

Round.

Standard 18 gauge—10 cents per inch inside diameter for 1 1/2 inch face and 1 cent additional for each 1/8 inch increase in width of face.

For other gauges—add 10 per cent. to above for each gauge increase in thickness.

Square Gaskets and odd shapes, per pound 1.10

Sheet metal, per pound 1.00

Corrugated Gaskets for rough faced joints, per pound 1.10



Asbestos Mill-Board.

Approximate weight per sheet, 40 x 40 inches.

Thickness, inches	1/32	3/64	1/16	3/32	1/8	3/16	1/4	3/8	1/2
Approximate weight, pounds	2	3	4	6	8	12	14	24	29

Case lots per pound ..... .07
Broken cases per pound ..... .10 } Cases weigh about 250 pounds.

We carry in stock hard, medium, and soft Mill-Board. We send medium unless otherwise specified.

Asbestos Roll Mill-Board.

Composed of fibrous Asbestos, taking the place of Asbestos sheathing where a heavier material is desired; also suitable for joint-packing, partition linings, etc. Put up in rolls 36 inches wide, approximating 100 pounds each, 1/16-inch thick, weight about 35 pounds to 100 square feet; 1/8-inch thick, weight about 65 pounds to 100 square feet.

Full rolls, per pound ..... .07
Broken rolls, per pound ..... .10

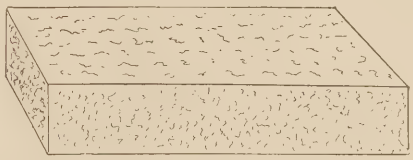
Special widths made to order in quantities only.

Asbestos Moulded Blocks.

Composed of a mass of felt-like Asbestos fibres closely cemented together with a non-conducting compound and formed into blocks 18 inches long by 4 inches wide.

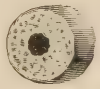
This material makes an effective and cheap covering for large steam surfaces, such as Boilers, Drums, Tanks, etc.

3/4-inch thick, per square foot ..... .10
1 " " " " ..... .12
1 1/2 " " " " ..... .18


ASBESTOS MOULDED BLOCK.

Asbestos and Rubber Wound Cloth Packing.


Class A. ROUND OR SQUARE.


Class C. ROUND OR SQUARE.


Class K.


Class L.

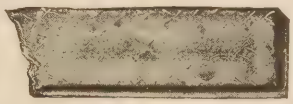
Asbestos and Rubber Wound Cloth Packing is made from layers of Asbestos cloth coated with our Asbestos and Rubber composition. This Packing is very strong and elastic and is suitable for joints of all kinds, including wet and low pressure steam and hot water work. Also furnished with wire interwoven to order. Regular sizes up to 2 1/2 inches in diameter. Standard sizes of Packing carried in stock, special sizes to order. Per pound 1.00

Asbestos and Rubber Tape.

Asbestos band or tape is covered with our improved Asbestos and India Rubber composition, for forming gaskets, etc. We make all widths from 5/16 to 2 1/4 inches. Per pound ..... .90

Kearsarge Asbestos-Metallic Tape, made in the same manner as our Asbestos and Rubber Tape, with fine strands of wire added to give greater strength. Per pound ..... .90

Asbestos and Rubber Rings and Gaskets, with cemented lap joints, made to order from our Asbestos and Rubber Tape or cloth. Per pound 1.50


ASBESTOS AND RUBBER TAPE.

Asbestos and Rubber Cloth.

This Cloth forms a superior flat packing; being very elastic, it adapts itself to all uneven surfaces, forming perfect steam, acid and air-tight joints.

In sheets and rolls 40 inches wide; weight about 7 oz. per square foot.

We also make two and three ply; per pound 1.00

Asbestos Wick Packing.


ASBESTOS WICK PACKING.

In 1/4, 1/2 and 1 pound balls and on 5 and 10 pound spools as follows:

Standard Asbestos Wick Packing, per pound ..... .45
XX Asbestos Wick Packing for wire drawing, caulking, etc., per pound ..... .45
Canadax Asbestos Wick Packing ..... .45

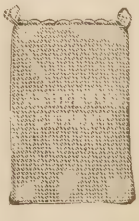
Customers ordering will please give size of balls or spools wanted; without such instructions, we ship 1-pound balls.

Asbestos Cement.

Composed almost wholly of Asbestos fibres and forms a light, porous material, partaking of the nature of a felt and a cement.

It is an efficient non-conducting covering for boilers, domes, and irregular surfaces, and is furnished dry, in bags; one bag containing sufficient material for covering about 40 square feet of flat surface, 1 inch thick.

Per bag weighing about 120 pounds 3.75

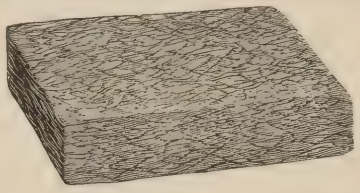


Asbestos Furnace Cement.

Used for "setting-up" and repairing broken joints in furnaces, ranges, heaters, and stoves.

10-pound Cans, each 1.00
5 " " " ..... .60
2 " " " ..... .35
1 " " " ..... .25

Hair Felt, Oakum, Waste, Mineral Wool, Etc.



HAIR FELT.

Rolls are 6 feet wide and 50 feet long; or 3 feet wide and 100 feet long.

Thickness, inches	1/4	1/2	3/4	1	1 1/2	2
Per Square Foot	.03 1/2	.04	.04 3/4	.05 1/2	.08	.10 1/2



OAKUM.

50 lb. Bales, per lb.... .10



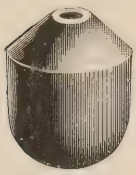
COTTON WASTE.

50 lb. Bales, per lb.... .12
100 " " .... .12



LAMPWICK.

Per lb..... .25



FULLER BIBB WASHERS.

Size	1/2	5/8	3/4	1
Each	.10	.10	.10	.10



FIBRE BIBB WASHERS.

Per dozen..... .50



BOSS WASHERS.

Per dozen..... 1.50



GASFITTERS' CEMENT.

Per lb..... .10



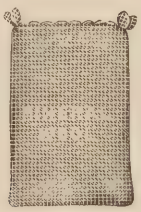
PIG LEAD.

At Market Rates.



HALF AND HALF SOLDER.

At Market Rates.

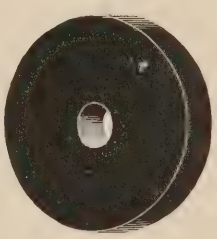


MINERAL WOOL.

Average.	Lbs. per Cubic Foot.	Square Foot 1 inch thick.	Cubic Feet to Ton.	Cost per 100 lbs. (in ton lots) at Factory.	Cost per Cubic Foot at Factory in ton Lots.
Ordinary Slag Wool	12	1 lb.	166	1.00	.12
Selected "	9	3/4 "	223	1.67	.15
Extra "	6	1/2 "	333	4.00	.24
Ordinary Rock Wool	12	1 "	166	2.00	.24
Selected "	8	2/3 "	250	4.00	.32
Extra "	6	1/2 "	333	7.00	.42

NOTE.—In less than ton lots add 25 cents per 100 pounds to factory prices.

The material is packed in 3-bushel burlap bags, for which a uniform price of 10 cents each is made. If returned to us free of all expenses (freight prepaid) and in good order, we credit them at full price charged. This privilege of allowance for empty bags is open only for thirty days after receipt of goods.



PUMP VALVES.

Above 2 inches in diameter, per lb..... 1.00

2 inches and less in diameter, special prices on application.

When ordering Valves, please state for what purpose you desire to use them; also give diameter, thickness and size of hole.

Flint and Emery Paper, Cloth, Etc.



"Brooklyn" Flint Paper.

IN SHEETS 9 x 11.

	Per Ream.
Nos. 000, 00, 0, ½, 1, 1½	5.00
No. 2	5.50
No. 2½	6.00
No. 3	6.50

Extra Coated 50-yd Rolls.

PER ROLL.

Size, inches.	24	30	36	40	42	48
Nos. 000 to 1½	5.50	8.00	10.00	12.00	13.00	15.00
No. 2	6.00	9.00	11.00	13.00	14.00	17.00
No. 2½	6.50	10.00	12.00	14.00	15.00	18.00
No. 3	7.00	11.00	13.00	15.00	16.00	20.00
No. 3½	8.00	13.00	15.00	17.00	18.00	23.00
No. 4	9.00	15.00	17.00	20.00	21.00	26.00

"Brooklyn" Emery Paper.

IN SHEETS 9 x 11.

	Per Ream.
Nos. 000, 00, 0, ½, 1, 1½	7.00
No. 2	8.00
No. 2½	10.00
No. 3	12.00

Emery Paper, in Rolls.

24 INCHES WIDE.

	Per Roll of 50 yds
Nos. 00, 0, ½, 1, 1½	7.50
No. 2	9.00
No. 2½	11.00
No. 3	13.00
No. 3½	15.00

"Brooklyn" Emery Cloth.

IN SHEETS 9 x 11.

	Per Ream.
Nos. FF, F, 000, 00, 0, ½, 1, 1½	20.00
No. 2	22.00
No. 2½	26.00
No. 3	28.00

Emery Cloth, in Rolls.

PER ROLL OF 50 YARDS.

Size, inches	9	18	27
Nos. 00, 0, 100, ½, 1, 1½	7.00	14.00	21.00
No. 2	8.00	16.00	24.00
No. 2½	9.50	19.00	28.50
No. 3	11.00	22.00	33.00

Flint Cloth, in Rolls.

PER ROLL OF 50 YARDS.

Size, inches	14	28
Nos. 000, 00, 0, ½, 1, 1½, 2	10.00	20.00
Nos. 2½ and 3	12.50	25.00

Flint Finishing Paper.

(4/0, 3/0, 2/0, 0)

"Empire" Flint Paper.

IN SHEETS 8¾ x 10½.

	Per Ream.
Nos. 00, 0, ½, 1, 1½, 2, 2½, 3	4.25

Crocus Cloth.

Per Ream 20.00

"Brooklyn" Ruby and Garnet Paper.

IN SHEETS 9 x 11.

	Per Ream.
Nos. 0000, 000, 00, 0, ½, 1, 1½	5.50
No. 2	6.00
No. 2½	6.50
No. 3	7.00

Ruby Paper.

Extra Coated 50-yd Rolls.

PER ROLL.

Size, inches	24
Nos. 000, 00, 0, ½, 1, 1½	6.00
No. 2	6.50
No. 2½	7.25
No. 3	8.25

Ruby and Garnet Cloth, in Rolls.

PER ROLL OF 50 YARDS.

Size, inches	14	28
Nos. 000, 00, 0, ½, 1, 1½, 2	12.50	25.00
Nos. 2½ and 3	15.00	30.00

"Brooklyn" Garnet Paper.

Extra Coated 50-yd Rolls.

PER ROLL.

Size, inches.	24	30	36	40	42	48
Nos. 000 to 1½	6.00	9.00	11.00	13.00	15.00	18.00
No. 2	6.50	10.00	12.00	14.00	16.00	20.00
No. 2½	7.25	11.00	13.00	15.00	17.00	22.00
No. 3	8.25	12.00	14.00	16.00	18.00	25.00
No. 3½	9.50	14.00	16.00	18.00	20.00	29.00

Moulded Ruby Paper.

(Widths, ⅞, 1, 1⅛, 1⅜, and 1½ inches.)

PER ROLL OF 25 YARDS.

Nos. 00 to 3	.33
Flat	.30

Ruby Cloth.

Moulded ..... .75 Flat ..... .70

Ruby Paper Cloth.

Moulded ..... .50 Flat ..... .45

Moulded Emery Cloth.

PER ROLL OF 25 YARDS.

Nos. 00 to 3	.75
Flat	.70

Metal Polish, Joint Compound, Bronze, Etc.



GERMAN PUTZ POMADE.

2 oz. Boxes, per doz..... .80
1 lb. Pail, per lb..... .40
5 " " " pail..... 2.00



UNIVERSAL METALLIC PUTZ POMADE.

1 oz., 3 oz., ½ lb., 1 lb., 3 lb., 5 lb., 10 lb., 25 lb.
Price, per lb..... .50



MATCHLESS METAL POLISH.

	Each.	Per Doz.	Per Gross.
No. 2, 3 oz. Boxes	.20	1.20	12.00
" 3, 4 " "	.30	1.80	18.00
" 4, 8 " "	.40	3.00	30.00
" 5, 16 " "	.60	5.00	50.00
3 lb. Pails	1.55	16.00	....
5 " "	2.00	20.00	....
10 " "	3.50	36.00	....
25 " "	8.00	80.00	....



PUTZ FLUID POLISH.

½ Pints, per doz. 2.00
Gallons, per gal. 2.00

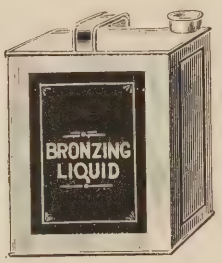


QUICK SHINE METAL POLISH.

½ Pints, per doz. 2.00
Gallons, per gal. 2.00



Gold Bronze, per lb. .90
Aluminum Bronze, per lb 1.50



BRONZING LIQUID.

Per gallon 1.50



DIXON FLAKE GRAPHITE.

5 lb. Cans, per can 1.25



DIXON'S JOINT COMPOUND.

5 lb. Cans, per can 1.80



DIXON'S TRACTION BELT DRESSING.

10 lb. Cans, per lb.		.60
25	" "	.50
50	" "	.45
100	" "	.40
Barrels,	"	.36



ALBANY GREASE.

5, 10 and 25 lb. Cans, 50 and 100 lb. Kegs.
Price, per lb..... .25



NUBIAN PIPE CEMENT.

5 lb. Pails, per lb..... .25



SMOOTH-ON.

Smooth-on Joints, per lb..... .24
" Compound, per lb.. .60



CLING-SURFACE BELT FILLER.

10, 25 and 50 lb. packages.
Price, per lb..... .70



PUTTY.

Per lb..... .15



WHITE LEAD.

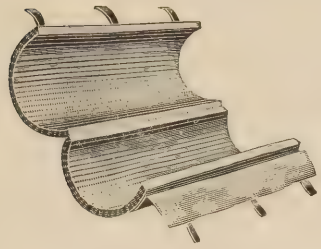
Per lb..... .20



RED LEAD.

Per lb..... .20

High Pressure Steam Pipe Covering.



ASBESTOS FIRE-FELT.

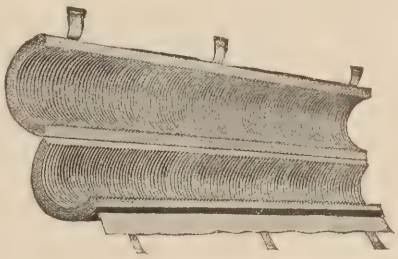
Asbestos Fire-Felt is a fabric of fibrous Asbestos, and is made in cylindrical sections for pipes, sheets for boilers, and rolls for heaters.

Fire-Felt is not affected by expansion or contraction of pipes, or moisture, and will not disintegrate.

Asbestos Fire-Felt sections are of sizes to fit standard makes of wrought iron pipe from ½ inch to 16 inches inclusive, and are carried in stock. Irregular forms made to order. Each section is 3 feet in length, 1 inch thick. Sectional fittings and valves of this material furnished from stock from ½ to 12 inches.

Asbestocel Covering comprises practically all of the insulating properties which are so well known to be found in asbestos and by using a minimum amount of asbestos it is therefore comparatively inexpensive and far superior to the clay and plaster compounds which are its close competitors in the matter of cost.

"Asbestocel" Covering is supplied in sections three feet long and approximately one inch thick. We are, however, prepared to make it ½-inch and ¾-inch to order.

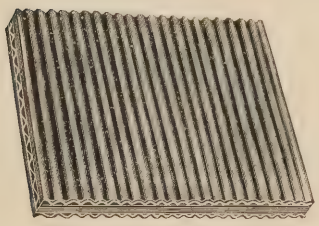


ASBESTOCEL (AIR-CELL).

Asbestos Fire-Felt and Asbestocel Coverings.

Inside Diameter of Pipe.	Covering. Per Foot.	Elbows. Each.	Tees. Each.	Valves. Each.
½ inch	.20	.25	.33	.33
¾ "	.22	.25	.33	.33
1 "	.23	.25	.33	.33
1¼ "	.24	.25	.33	.33
1½ "	.25	.25	.33	.33
2 "	.27	.27	.36	.36
2½ "	.31	.31	.41	.41
3 "	.36	.36	.48	.48
3½ "	.40	.40	.53	.53
4 "	.44	.44	.59	.59
4½ "	.47	.47	.63	.63
5 "	.50	.50	.67	.67
6 "	.58	.58	.77	.77
7 "	.67	.70	90	90
8 "	.74	77	1.00	1.00
9 "	.83	84	1.15	----
10 "	.95	1.00	1.30	----
12 "	1.10	----	----	----
14 "	1.30			
16 "	1.55			

Use Asbestos Cement Felting for Fittings larger than 12 inches.



ASBESTOCEL SHEETS.

Asbestocel Sheets are made similar to our "Asbestocel" Sectional Pipe Covering and are adapted for all classes of heat resisting and heat retaining work such as for steam boilers, flues, breechings, shaftways, ceilings, etc.

Asbestocel Sheets.

In Sheets 3 x 3 feet, ½-in. thick, per square foot .17
" 3 x 3 " ¾ " " " .22
" 3 x 3 " 1 " " " .27
In Sheets 3 x 3 feet, 1½-in. thick, per square foot .35
" 3 x 3 " 2 " " " .45

Special thicknesses and irregular shapes made to order at a slight additional cost.

Remanit Sectional Pipe Covering.



COVERING APPLIED TO PIPE.

"Remanit" is a non-heat conductive covering, composed of carbonized silk, for use on pipes and boilers. This covering has been in practical use for several years and has given excellent satisfaction, as shown by numerous testimonials.

"Remanit" has the following qualities to recommend it:

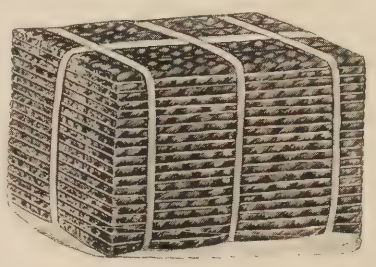
It is a superior non-conductor of heat, as shown by tests.
It possesses durability and will not deteriorate after a long period of use.
It is lighter than any other covering.
It may be readily applied.
It may be removed from one pipe and applied to another.
It is not affected by jars or vibrations.
It does not disintegrate by moisture.
It is as cheap as any other first-class covering.

The property of hair felt as a non-conductor is known, in fact, it is the best heat insulator of all the coverings that have ordinarily been used in this country; but hair felt suffers the disadvantage that it will break down when used on steam pipes and lose its fibrous structure after an extended period of use. This disadvantageous feature in hair felt exists even where it has been used in connection with asbestos paper, etc., and there has been no means so far discovered, that has been demonstrated by the test of time, that will prevent a covering composed in whole or partly of hair felt from finally breaking down after a long use on steam pipes. The "Remanit" covering has been found to hold its own after a long period of use under conditions that would break down hair felt, and has been shown to be more durable in tests where it was compared directly with the latter. Tests of the most reliable nature also prove that it is better than hair felt as a non-conductor of heat, and as hair felt is a superior to any of the sectional pipe coverings, "Remanit" stands at the head of the list in this respect.

It is made in sections 3 feet long and covered with heavy ducking. Gold lacquered bands are furnished with each section. A braided form is furnished for covering tees, elbows, valves and other fittings.

"Remanit" covering is also supplied in the form of large sheets of the desired thickness and size, so that it can be readily applied to surface of boilers. It is especially adaptable for locomotives and marine service, as it is not affected by jar or shock and may be readily removed for inspection.

It is largely used for water pipes, for pipes of refrigerating machines, and it has given much satisfaction when used for these purposes.



LAID FLAT READY FOR SHIPMENT.

Inside Diameter of Pipe.	Per Foot.
½-inch	.22
¾ "	.23
1 "	.24
1¼ "	.26
1½ "	.27
2 "	.32
2½ "	.36
3 "	.41
3½ "	.43
4 "	.48
4½ "	.52
5 "	.54
6 "	.63
7 "	.70
8 "	.77
9 "	.83
10 "	.90
12 "	1.08
14 "	1.20
15 "	1.28
16 "	1.35

When ordering state whether for high or low pressure steam, hot water or refrigerating pipes.

Low Pressure Steam, Hot and Cold Water Pipe Covering.

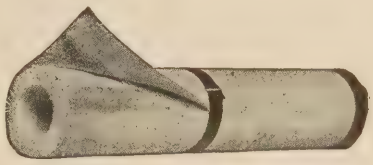


ASBESTOS MOULDED COVERING.
For Ordinary Steam Pressure.

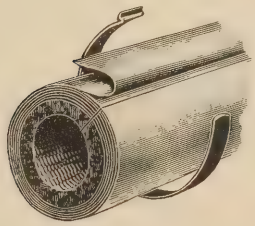
Asbestos Moulded Covering is offered as an inexpensive and effective Moulded Non-Conducting Covering. It is fireproof, and adapted for ordinary steam pressure. It is supplied in sections three feet long which are provided with canvas jackets and metal bands to hold them firmly in place, and can be easily applied by unskilled workmen.

We carry in stock sections and fittings up to 12 inches.

Wool Felt Sectional Covering is made of the best wool felt $\frac{5}{8}$ inches thick and lined with asbestos paper. It is covered with heavy sheeting and each section is furnished with gold lacquered bands. The Hot Water Wool Felt Covering is made of the same material as the low pressure steam $\frac{3}{8}$ inches thick. On account of their cost and ease of application these coverings are in great demand.



WOOL FELT SECTIONAL COVERING.
For Low Pressure Steam and Hot Water.



ZERO COLD WATER COVERING.

"Zero" Covering is made specially for cold water pipes, to prevent freezing. That part of the covering coming next to the pipe consists of a $\frac{3}{4}$-inch layer of hair felt, around which is wrapped layers of corrugated wool felting to a thickness of $\frac{3}{4}$ inch, making the whole covering $1\frac{1}{2}$ inches thick. Supplied in three-foot sections. There is pasted firmly to the covering a strong canvas with laps at end and for closing seams; metal bands with which to hold the covering in place accompany each shipment. Fittings to match.

Asbestos Moulded, Wool Felt and Zero Coverings.

Size. Inside Diameter.	Covering per Lineal Foot.	Elbows. Each.	Tees. Each.	Valves. Each.
$\frac{1}{2}$ inch	.20	.25	.33	.33
$\frac{3}{4}$ "	.22	.25	.33	.33
1 "	.23	.25	.33	.33
$1\frac{1}{4}$ "	.24	.25	.33	.33
$1\frac{1}{2}$ "	.25	.25	.33	.33
2 "	.27	.27	.36	.36
$2\frac{1}{2}$ "	.31	.31	.41	.41
3 "	.36	.36	.48	.48
$3\frac{1}{2}$ "	.40	.40	.53	.53
4 "	.44	.44	.59	.59
$4\frac{1}{2}$ "	.47	.47	.63	.63
5 "	.50	.50	.67	.67
6 "	.58	.58	.77	.77
7 "	.67	.70	.90	.90
8 "	.74	.77	1.00	1.00
9 "	.83	.84	1.15	----
10 "	.95	1.00	1.30	---
12 "	1.10	----	----	---

Use asbestos cement fittings for larger sizes than 10 inch.

Machine Bolts.



MACHINE BOLT.

Square Head Machine Bolts with Square Nuts and Finished Points.

Price per 100.

Diameter-- Length, inches	1/4	5/16	3/8	7/16	1/2	9/16 and 5/8	3/4	7/8	1	1 1/8	1 1/4
3/4 to 1 1/2	1.70	2.00	2.40	2.80	3.60	5.20	7.20	10.50	15.10	22.50	30.00
2	1.78	2.12	2.56	3.00	3.86	5.58	7.70	11.20	16.00	23.70	31.50
2 1/2	1.86	2.24	2.72	3.20	4.12	5.96	8.20	11.90	16.90	24.90	33.00
3	1.94	2.36	2.88	3.40	4.38	6.34	8.70	12.60	17.80	26.10	34.50
3 1/2	2.02	2.48	3.04	3.60	4.64	6.72	9.20	13.30	18.70	27.30	36 00
4	2.10	2.60	3.20	3.80	4.90	7.10	9.70	14.00	19.60	28.50	37.50
4 1/2	2.18	2.72	3.36	4.00	5.16	7.48	10.20	14.70	20.50	29.70	39.00
5	2.26	2.84	3.52	4.20	5.42	7.86	10.70	15.40	21.40	30.90	40.50
5 1/2	2.34	2.96	3.68	4.40	5.68	8.24	11.20	16.10	22.30	32.10	42.00
6	2.42	3.08	3.84	4.60	5.94	8.62	11.70	16.80	23.20	33.30	43.50
6 1/2	2.50	3.20	4.00	4.80	6.20	9.00	12.20	17.50	24.10	34.50	45.00
7	2.58	3.32	4.16	5.00	6.46	9.38	12.70	18.20	25.00	35.70	46 50
7 1/2	2.66	3.44	4.32	5.20	6.72	9.76	13.20	18.90	25.90	36.90	48.00
8	2.74	3.56	4.48	5.40	6.98	10.14	13.70	19.60	26.80	38.10	49.50
9	2.90	3.80	4.80	5.80	7.50	10.90	14.70	21.00	28.60	40.50	52.50
10	3.06	4.04	5.12	6.20	8.02	11.66	15.70	22.40	30.40	42.90	55.50
11	3.22	4.28	5.44	6.60	8.54	12.42	16.70	23.80	32.20	45.30	58.50
12	3.38	4.52	5.76	7.00	9.06	13.18	17.70	25.20	34.00	47.70	61.50
13	3.54	4.76	6.08	7.40	9.58	13.94	18.70	26.60	35.80	50.10	64.50
14	3.70	5.00	6.40	7.80	10.10	14.70	19.70	28.00	37.60	52.50	67.50
15	3.86	5.24	6.72	8.20	10.62	15.46	20.70	29.40	39.40	54.90	70.50
16	4.02	5.48	7.04	8.60	11.14	16.22	21.70	30.80	41.20	57.30	73.50
17	4.18	5.72	7.36	9.00	11.66	16.98	22.70	32.20	43.00	59.70	76.50
18	4.34	5.96	7.68	9.40	12.18	17.74	23.70	33 60	44.80	62.10	79.50
19	4.50	6.20	8.00	9.80	12.70	18.50	24.70	35.00	46.60	64.50	82 50
20	4.66	6.44	8.32	10.20	13.22	19.26	25.70	36.40	48.40	66.90	85.50
21	----	----	----	----	----	----	----	26.70	37.80	50.20	69.30	88.50
22	----	----	----	----	----	----	----	27.70	39.20	52.00	71.70	91.50
23	----	----	----	----	----	----	----	28.70	40.60	53.80	74.10	94.50
24	----	----	----	----	----	----	----	29.70	42 00	55.60	76.50	97.50
25	----	----	----	----	----	----	----	30.70	43.40	57.40	78.90	100.50
26	----	----	----	----	----	----	----	31.70	44.80	59.20	81.30	103.50
27	----	----	----	----	----	----	----	32.70	46.20	61.00	83.70	106.50
28	----	----	----	----	----	----	----	33.70	47.60	62.80	86.10	109.50
29	----	----	----	----	----	----	----	34.70	49.00	64.60	88.50	112.50
30	----	----	----	----	----	----	----	35.70	50.40	66.40	90.90	115.50

The following extras are to be understood as a part of this list:

Bolts with Hexagon Heads or Hexagon Nuts, 10 per cent. extra.

If both Hexagon Heads and Hexagon Nuts, 20 per cent. extra.

Joint Bolts with Oblong Nuts, 10 per cent. extra.

Bolts with Tee Heads, Askew Heads and Eccentric Heads, 20 per cent. extra.

Special Bolts with irregular Threads and unusual dimensions of Heads or Nuts will be charged extra at the discretion of the manufacturer.

Common Carriage Bolts with Short Full Size Square Under Heads, Forged Nuts and Finished Points.



CARRIAGE BOLT.

In effect February 14, 1895.

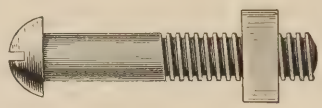
Price per 100.

Length.	Diam. 9/16 and 1/4 inch.	Diam. 5/16 inch.	Diam. 3/8 inch.	Diam. 7/16 inch.	Diam. 1/2 inch.	Diam. 9/16 and 5/8 inch.	Diam. 3/4 inch.
1 inch	1.00	1.20	1.50	2.20	3.00	5.00	7.20
1 1/4 "	1.00	1.20	1.50	2.20	3.00	5.00	7.20
1 1/2 "	1.00	1.20	1.50	2.20	3.00	5.00	7.20
1 3/4 "	1.04	1.25	1.50	2.20	3.00	5.00	7.20
2 "	1.08	1.30	1.50	2.20	3.00	5.00	7.20
2 1/4 "	1.12	1.35	1.57	2.28	3.00	5.00	7.20
2 1/2 "	1.16	1.40	1.64	2.36	3.00	5.00	7.20
2 3/4 "	1.20	1.45	1.71	2.44	3.00	5.00	7.20
3 "	1.24	1.50	1.78	2.52	3.00	5.00	7.20
3 1/4 "	1.28	1.55	1.85	2.60	3.10	5.15	7.40
3 1/2 "	1.32	1.60	1.92	2.68	3.20	5.30	7.60
3 3/4 "	1.36	1.65	1.99	2.76	3.30	5.45	7.80
4 "	1.40	1.70	2.06	2.84	3.40	5.60	8.00
4 1/4 "	1.44	1.75	2.13	2.92	3.50	5.75	8.20
4 1/2 "	1.48	1.80	2.20	3.00	3.60	5.90	8.40
4 3/4 "	1.52	1.85	2.27	3.08	3.70	6.05	8.60
5 "	1.56	1.90	2.34	3.16	3.80	6.20	8.80
5 1/2 "	1.64	2.00	2.48	3.32	4.00	6.50	9.20
6 "	1.72	2.10	2.62	3.48	4.20	6.80	9.60
6 1/2 "	1.80	2.20	2.76	3.64	4.40	7.10	10.00
7 "	1.88	2.30	2.90	3.80	4.60	7.40	10.40
7 1/2 "	1.96	2.40	3.04	3.96	4.80	7.70	10.80
8 "	2.04	2.50	3.18	4.12	5.00	8.00	11.20
8 1/2 "	2.12	2.60	3.32	4.28	5.20	8.30	11.60
9 "	2.20	2.70	3.46	4.44	5.40	8.60	12.00
9 1/2 "	2.28	2.80	3.60	4.60	5.60	8.90	12.40
10 "	2.36	2.90	3.74	4.76	5.80	9.20	12.80
10 1/2 "	2.44	3.00	3.88	4.92	6.00	9.40	13.20
11 "	2.52	3.10	4.02	5.08	6.20	9.80	13.60
11 1/2 "	2.60	3.20	4.16	5.24	6.40	10.10	14.00
12 "	2.68	3.30	4.30	5.40	6.60	10.40	14.40
13 "	2.84	3.50	4.58	5.72	7.00	11.00	15.20
14 "	3.00	3.70	4.86	6.04	7.40	11.60	16.00
15 "	3.16	3.90	5.14	6.36	7.80	12.20	16.80
16 "	3.32	4.10	5.42	6.68	8.20	12.80	17.60
17 "	3.48	4.30	5.70	7.00	8.60	13.40	18.40
18 "	3.64	4.50	5.98	7.32	9.00	14.00	19.20
19 "	3.80	4.70	6.26	7.64	9.40	14.60	20.00
20 "	3.96	4.90	6.54	7.96	9 80	15.20	20.80

Stove and Sink Bolts.



FLAT HEAD STOVE BOLT.



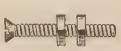
ROUND HEAD STOVE BOLT.

Stove Bolts.

Price Per 100.

Length, inch.	Flat Head Stove Bolts. Diam. 5/32 & 3/16 inch.	Diam. 7/32 inch.	Diam. 1/4 inch.	Diam. 5/16 inch.	Diam. 3/8 inch.	Round Head Stove Bolts. Diam. 5/32 & 3/16 inch.	Diam. 7/32 inch.	Diam. 1/4 inch.	Diam. 5/16 inch.	Diam. 3/8 inch.
3/8	.75	----	----	----	----	----	----	----	----	----
1/2	.75	.80	.85	----	----	.85	.90	.95	1.35	2.50
5/8	.75	.80	.85	----	----	.85	.90	.95	1.35	2.50
3/4	.75	.80	.85	1.20	2.25	.85	.90	.95	1.35	2.50
7/8	.80	.85	.90	1.30	2.30	.90	.95	1.00	1.40	2.55
1	.80	.85	.90	1.30	2.35	.90	.95	1.00	1.45	2.60
1 1/8	.85	.90	.95	1.40	2.45	.95	1.00	1.05	1.50	2.65
1 1/4	.85	.90	.95	1.40	2.45	.95	1.00	1.05	1.55	2.70
1 3/8	.90	.95	1.00	1.50	2.55	1.00	1.05	1.10	1.60	2.75
1 1/2	.90	.95	1.00	1.50	2.55	1.00	1.05	1.10	1.65	2.80
1 3/4	.95	1.00	1.05	1.55	2.65	1.05	1.10	1.15	1.70	2.85
2	1.00	1.05	1.10	1.60	2.75	1.10	1.15	1.20	1.75	2.90
2 1/4	1.05	1.10	1.15	1.65	2.85	1.15	1.20	1.25	1.80	3.00
2 1/2	1.10	1.15	1.20	1.70	2.95	1.20	1.25	1.30	1.85	3.10
2 3/4	1.15	1.20	1.25	1.75	3.05	1.25	1.30	1.35	1.90	3.20
3	1.20	1.25	1.30	1.80	3.15	1.30	1.35	1.40	1.95	3.30
3 1/4	1.25	1.30	1.35	1.85	3.25	1.35	1.40	1.45	2.00	3.40
3 1/2	1.30	1.35	1.40	1.90	3.35	1.40	1.45	1.50	2.05	3.50
3 3/4	1.35	----	1.45	1.95	3.45	1.45	1.50	1.55	2.10	3.60
4	1.40	----	1.50	2.00	3.55	1.50	1.55	1.60	2.15	3.70
4 1/4	1.45	----	1.55	2.05	3.65	1.55	1.60	1.65	2.20	3.85
4 1/2	1.50	----	1.60	2.10	3.75	1.60	1.65	1.70	2.25	4.00
4 3/4	1.55	----	1.65	2.15	3.85	1.65	1.70	1.75	2.30	4.05
5	1.60	----	1.70	2.20	3.95	1.70	1.75	1.80	2.35	4.10
5 1/4	1.65	----	1.75	2.25	4.05	1.75	1.80	1.85	2.40	4.20
5 1/2	1.70	----	1.80	2.30	4.15	1.80	1.85	1.90	2.45	4.30
5 3/4	1.75	----	1.85	2.35	4.25	1.85	1.90	1.95	2.50	4.40
6	1.80	----	1.90	2.40	4.35	1.90	1.95	2.00	2.55	4.50
6 1/4	1.85	----	1.95	2.45	4.45	1.95	2.00	2.05	2.60	4.60
6 1/2	1.90	----	2.00	2.50	4.55	2.00	2.05	2.10	2.65	4.70

Sink Bolts—With Two Nuts.



Sink Bolts.

Price Per 100.

1 1/2	in. long,	1/4	in. diameter	1.40	2 1/2	in. long,	1/4	in. diameter	1.60
1 3/4	"	1/4	"	1.45	2 3/4	"	1/4	"	1.65
2	"	1/4	"	1.50	3	"	1/4	"	1.70
2 1/4	"	1/4	"	1.55					

Blank Bolts with Either Square or Round Heads, Finished Points.



BLANK BOLT.

Manufacturers' Standard List. In effect February 14, 1895.

Price per 100.

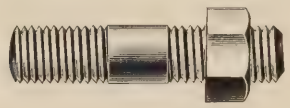
Length.	Diam. 1/4 inch.	Diam. 5/16 inch.	Diam. 3/8 inch.	Diam. 7/16 inch.	Diam. 1/2 inch.	Diam. 9/16 and 5/8 inch.	Diam. 3/4 inch.	Diam. 7/8 inch.	Diam. 1 inch.
1½ inch	1.20	1.40	1.60	2.00	2.50	4.00	5.60	7.80	10.40
2 "	1.30	1.52	1.74	2.18	2.74	4.36	6.10	8.50	11.30
2½ "	1.40	1.64	1.88	2.36	2.98	4.72	6.60	9.20	12.20
3 "	1.50	1.76	2.02	2.54	3.22	5.08	7.10	9.90	13.10
3½ "	1.60	1.88	2.16	2.72	3.46	5.44	7.60	10.60	14.00
4 "	1.70	2.00	2.30	2.90	3.70	5.80	8.10	11.30	14.90
4½ "	1.80	2.12	2.44	3.08	3.94	6.16	8.60	12.00	15.80
5 "	1.90	2.24	2.58	3.26	4.18	6.52	9.10	12.70	16.70
5½ "	2.00	2.36	2.72	3.44	4.42	6.88	9.60	13.40	17.60
6 "	2.10	2.48	2.86	3.62	4.66	7.24	10.10	14.10	18.50
6½ "	2.20	2.60	3.00	3.80	4.90	7.60	10.60	14.80	19.40
7 "	2.30	2.72	3.14	3.98	5.14	7.96	11.10	15.50	20.30
7½ "	2.40	2.84	3.28	4.16	5.38	8.32	11.60	16.20	21.20
8 "	2.50	2.96	3.42	4.34	5.62	8.68	12.10	16.90	22.10
9 "	2.70	3.20	3.70	4.70	6.10	9.40	13.10	18.30	23.90
10 "	2.90	3.44	3.98	5.06	6.58	10.12	14.10	19.70	25.70
11 "	3.10	3.68	4.26	5.42	7.06	10.84	15.10	21.10	27.50
12 "	3.30	3.92	4.54	5.78	7.54	11.56	16.10	22.50	29.30
13 "	3.50	4.16	4.82	6.14	8.02	12.28	17.10	23.90	31.10
14 "	3.70	4.40	5.10	6.50	8.50	13.00	18.10	25.30	32.90
15 "	3.90	4.64	5.38	6.86	8.98	13.72	19.10	26.70	34.70
16 "	4.10	4.88	5.66	7.22	9.46	14.44	20.10	28.10	36.50
17 "	4.30	5.12	5.94	7.58	9.94	15.16	21.10	29.50	38.30
18 "	4.50	5.36	6.22	7.94	10.42	15.88	22.10	30.90	40.10
19 "	4.70	5.60	6.50	8.30	10.90	16.60	23.10	32.30	41.90
20 "	4.90	5.84	6.78	8.66	11.38	17.32	24.10	33.70	43.70

The following extras are to be understood as a part of this list:

Blank Bolts with Hexagon Heads, 10 per cent. extra.

Blank Bolts with Tee Heads, Askew Heads and Eccentric Heads, 20 per cent. extra.

Stud Bolts and Bolt Ends.



STUD BOLT.

Rough Iron Stud Bolts with Cold Punched Chamfered and Trimmed Hexagon Nuts.

Price per 100.

Diameter, inches	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
No. Threads to inch	16	14	13	12	11	10	9	8	7	7
1 1/2 inch	4.00	5.10	5.50	----	----	----	----	----	----	----
1 3/4 "	4.10	5.25	5.65	----	----	----	----	----	----	----
2 "	4.20	5.40	5.80	8.50	8.50	12.40	----	----	----	----
2 1/4 "	4.30	5.55	5.95	8.75	8.75	12.70	----	----	----	----
2 1/2 "	4.40	5.70	6.10	9.00	9.00	13.00	18.00	----	----	----
2 3/4 "	4.50	5.85	6.25	9.25	9.25	13.30	18.50	----	----	----
3 "	4.60	6.00	6.40	9.50	9.50	13.60	19.00	27.80	----	----
3 1/4 "	4.70	6.15	6.55	9.75	9.75	13.90	19.50	28.40	----	----
3 1/2 "	4.80	6.30	6.70	10.00	10.00	14.20	20.00	29.00	----	----
3 3/4 "	4.90	6.45	6.85	10.25	10.25	14.50	20.50	29.60	----	----
4 "	5.00	6.60	7.00	10.50	10.50	14.80	21.00	30.20	45.00	64.00
4 1/2 "	5.25	6.90	7.30	11.00	11.00	15.40	22.00	31.40	46.50	66.50
5 "	6.00	7.60	7.60	11.50	11.50	16.00	23.00	32.60	48.00	69.00
5 1/2 "	7.25	8.00	8.00	12.00	12.00	16.60	24.00	33.80	49.50	71.50
6 "	8.00	8.45	8.45	12.50	12.50	17.20	25.00	35.00	51.00	74.00
7 "	----	----	----	13.60	13.60	18.60	27.00	37.50	54.00	79.50
8 "	----	----	----	14.80	14.80	20.10	29.10	40.10	58.00	85.00
9 "	----	----	----	----	----	21.60	31.20	42.80	62.50	90.50
10 "	----	----	----	----	----	23.20	33.40	45.50	67.00	96.00

In ordering Studs, state length of thread wanted on each end, and length of body. The shorter threaded end has a tight fit.

Studs without Nuts will be charged at a reduction of 15 per cent. from list prices; and Studs with two Hexagon Nuts are sold at 15 per cent. less discount.

When Studs with Case-Hardened Nuts are ordered, the latter will be charged separately.

For Studs with Semi-Finished Nuts, add 10 per cent. to list prices.



BOLT END.
Fitted with Square Nut.

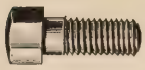
Bolt Ends.

Size of Iron. Inches.	Length. Inches.	Price per lb.	Size of Iron. Inches.	Length. Inches.	Price per lb.
3/16	6 and 8	.32	1 1/4	14	.11
1/4	8	.25	1 3/8	15	.11
5/16	8	.20	1 1/2	16	.11
3/8	7 and 10	.18	1 5/8	17	.12
7/16	10	.16	1 3/4	18	.12
1/2 and 9/16	8 and 12	.14	1 7/8	19	.12
5/8	9 and 12	.12	2	20	.12
3/4	10 and 12	.10	2 1/4	22	.14
7/8	11 and 12	.10	2 1/2	24	.14
1	12	.10	2 3/4	24	.16
1 1/8	13	.10	3	26	.18

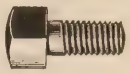
With Hexagon Nuts, 10 per cent. extra.

Bolt Ends ordered shorter than above Standard lengths, in lots of 100 and over, will be charged at the price per hundred of Machine Bolts of same length, subject to same discount, in smaller lots extra. Only the larger sizes enumerated are kept in stock.

Cap and Set Screws and Tap Bolts.



HEXAGON HEAD CAP SCREW.



SQUARE HEAD CAP SCREW.

Hexagon Head Cap Screws.—Finished.

Price per 100.

Length under head to extreme point.	Diam. of Screw	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
	3/4 inch	3.00	3.25	3.75	4.40	5.50	7.00	----	----	----	----	----	----
	1 "	3.25	3.50	4.00	4.70	5.70	7.00	9.50	----	----	----	----	----
	1 1/4 "	3.50	3.75	4.25	5.00	6.00	7.50	9.50	12.20	----	----	----	----
	1 1/2 "	3.75	4.00	4.50	5.30	6.30	8.00	10.00	12.20	16.00	----	----	----
	1 3/4 "	4.00	4.25	4.75	5.60	6.60	8.50	10.60	12.80	16.60	21.20	----	----
	2 "	4.25	4.60	5.05	5.95	7.00	9.10	11.20	13.40	17.20	22.30	29.00	37.50
	2 1/4 "	4.55	5.00	5.40	6.35	7.50	9.70	11.90	14.10	17.90	23.60	30.50	39.30
	2 1/2 "	4.85	5.40	5.80	6.80	8.00	10.40	12.70	14.90	18.80	25.10	32.30	41.40
	2 3/4 "	5.15	5.80	6.30	7.30	8.60	11.20	13.60	15.90	20.00	26.90	34.40	44.00
	3 "	5.45	6.20	6.80	7.90	9.30	12.10	14.70	17.00	21.80	29.00	37.00	47.50
Threads to inch		20	18	16	14	12	12	11	10	9	8	7	7
Add for each 1/4 inch		.30	.40	.50	.60	.80	1.00	1.30	1.60	2.00	2.40	3.00	4.00

Square Head Cap Screws.—Finished.

Price per 100.

Length under head to extreme point.	Diam. of Screw	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8
	3/4 inch	2.40	2.75	3.20	3.80	4.40	5.75	----	----	----	----	----	----	----
	1 "	2.60	2.95	3.40	4.00	4.70	5.75	7.70	----	----	----	----	----	----
	1 1/4 "	2.75	3.10	3.65	4.20	4.95	6.05	7.70	10.50	----	----	----	----	----
	1 1/2 "	2.90	3.30	3.85	4.45	5.25	6.35	8.25	10.50	14.00	----	----	----	----
	1 3/4 "	3.05	3.50	4.10	4.70	5.55	6.65	8.80	11.10	14.80	18.00	----	----	----
	2 "	3.25	3.70	4.35	4.95	5.90	7.05	9.40	11.80	15.70	19.00	22.50	----	----
	2 1/4 "	3.50	4.00	4.65	5.25	6.30	7.55	10.10	12.60	16.70	20.20	24.00	30.00	----
	2 1/2 "	3.75	4.35	5.00	5.60	6.75	8.15	10.90	13.50	17.80	21.50	25.80	32.00	39.00
	2 3/4 "	4.00	4.70	5.45	6.00	7.25	8.85	11.80	14.60	19.10	23.10	27.90	34.20	41.50
	3 "	4.25	5.05	5.90	6.55	7.80	9.65	12.80	15.90	20.60	25.00	30.50	37.00	45.00
Threads to inch		20	18	16	14	12	12	11	10	9	8	7	7	6
Add for each 1/4 inch		.25	.35	.45	.55	.65	.90	1.20	1.50	1.80	2.30	3.00	3.50	4.00

Where style of head is not specified hexagon will be sent.



SET SCREW.

Square Head Set Screw and Tap Bolt.

Price per 100.

Length under head to extreme point.	Diam. of Screw	1/4	5/16	3/8	7/16	1/2	9/16 and 5/8	3/4	7/8	1
	1 1/2 inch	1.00	1.15	1.35	1.60	2.00	3.00	4.20	6.00	8.00
	1 3/4 "	1.05	1.21	1.42	1.69	2.10	3.12	4.35	6.20	8.25
	2 "	1.10	1.27	1.49	1.78	2.20	3.24	4.50	6.40	8.50
	2 1/4 "	1.15	1.33	1.56	1.87	2.30	3.36	4.65	6.60	8.75
	2 1/2 "	1.20	1.39	1.63	1.96	2.40	3.48	4.80	6.80	9.00
	2 3/4 "	1.25	1.45	1.70	2.05	2.50	3.60	4.95	7.00	9.25
	3 "	1.30	1.51	1.77	2.14	2.60	3.72	5.10	7.20	9.50
	3 1/4 "	----	1.57	1.84	2.23	2.70	3.84	5.25	7.40	9.75
	3 1/2 "	----	----	1.91	2.32	2.80	3.96	5.40	7.60	10.00
	3 3/4 "	----	----	----	2.41	2.90	4.08	5.55	7.80	10.25
	4 "	----	----	----	----	3.00	4.20	5.70	8.00	10.50

With Hexagon Heads 10 per cent. extra.

Iron Set Screws and Turnbuckles.



IRON SET SCREW.

Case Hardened Iron Set Screws.

Price per 100.

Length under head to extreme point. — Dia. of Screw	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
3/4-inch	2.00	2.20	2.50	2.90	3.40	4.25	5.00	----	----	----	----	----
1 "	2.15	2.35	2.65	3.10	3.60	4.25	5.00	7.00	----	----	----	----
1 1/4 "	2.30	2.50	2.80	3.30	3.80	4.50	5.25	7.00	11.30	----	----	----
1 1/2 "	2.45	2.65	2.95	3.50	4.00	4.75	5.50	7.50	11.30	14.90	----	----
1 3/4 "	2.60	2.80	3.10	3.70	4.20	5.00	5.75	8.00	12.00	15.90	19.50	----
2 "	2.80	3.00	3.30	3.95	4.45	5.30	6.05	8.60	12.90	17.00	21.10	25.30
2 1/4 "	3.05	3.25	3.55	4.25	4.75	5.65	6.40	9.30	13.80	18.40	22.90	27.40
2 1/2 "	3.30	3.55	3.85	4.60	5.10	6.05	6.80	10.00	14.80	19.80	24.70	29.60
2 3/4 "	3.55	3.85	4.20	5.00	5.50	6.50	7.25	10.80	15.90	21.40	26.70	32.00
3 "	3.80	4.15	4.55	5.45	5.95	7.00	7.75	11.70	17.10	23.00	28.80	34.60
3 1/4 "	----	4.45	4.90	5.90	6.45	7.55	8.35	12.70	18.40	24.70	31.00	37.40
3 1/2 "	----	----	5.25	6.35	6.95	8.10	8.95	13.70	19.70	26.40	33.20	40.20
3 3/4 "	----	----	----	6.80	7.45	8.65	9.55	14.70	21.00	28.10	35.40	43.00
4 "	----	----	----	----	7.95	9.20	10.15	15.70	22.30	29.80	37.60	45.80
4 1/4 "	----	----	----	----	----	9.75	10.75	16.70	23.60	31.50	39.80	48.60
4 1/2 "	----	----	----	----	----	----	11.35	17.70	24.90	33.20	42.00	51.40
4 3/4 "	----	----	----	----	----	----	----	18.70	26.20	34.90	44.20	54.20
5 "	----	----	----	----	----	----	----	----	27.50	36.60	46.40	57.00
Threads to inch	20	18	16	14	12	12	11	10	9	8	7	7
Add for each 1/4 in.	.25	.30	.35	.45	.50	.55	.60	1.00	1.30	1.70	2.20	2.80

For Steel Set Screws add 25 per cent. to above list.



TURNBUCKLE.

Turnbuckles.

Size.	Price.	Size.	Price.
3/8-inch	.40	1 7/8-inch	2.25
7/16 "	.42	2 "	2.65
1/2 "	.45	2 1/8 "	3.10
5/8 "	.50	2 1/4 "	3.50
3/4 "	.63	2 3/8 "	4.00
7/8 "	.75	2 1/2 "	4.50
1 "	.88	2 3/4 "	5.50
1 1/8 "	1.00	3 "	6.50
1 1/4 "	1.25	3 1/4 "	8.00
1 3/8 "	1.38	3 1/2 "	10.00
1 1/2 "	1.50	3 3/4 "	15.00
1 5/8 "	1.75	4 "	20.00
1 3/4 "	2.00		

All ordinary sizes carried in stock. Turnbuckles of any length made to order at short notice. Buckles without Stub Ends furnished when desired.

Iron and Brass Machine Screws.



FLAT HEAD MACHINE SCREW.



ROUND HEAD MACHINE SCREW.

Iron Machine Screws.

Flat, Round or Fillister Head.

Price Per Gross.

Threads to Inch.	56	48	32 40	36	30 32	30 32	30 32	24 32	30	20 24	20 24	16 18	20	16 18	16	18	14 16		14		16
No.	2	3	4	5	6	7	8	9	10	12	14	16		18	20	22	24	26	28		30
Inches.																					
3/16	.25	.25	.25	.29	.29																
1/4	.25	.25	.25	.29	.29	.35	.35	.43	.43												
5/16	.27	.27	.27	.31	.31	.38	.38	.46	.46												
3/8	.27	.27	.27	.31	.31	.38	.38	.46	.46	.59	.74	.95									
7/16	.29	.29	.29	.33	.33	.41	.41	.49	.49	.59	.74	.95									
1/2	.29	.29	.29	.33	.33	.41	.41	.49	.49	.59	.74	.95	1.10	1.25	1.45	1.70					
9/16	.33	.33	.33	.36	.36	.46	.46	.54	.54	.66	.81	1.00	1.15	1.35	1.65	1.90					
5/8		.33	.33	.36	.36	.46	.46	.54	.54	.66	.81	1.00	1.15	1.35	1.65	1.90					
3/4			.37	.42	.42	.52	.52	.63	.63	.74	.88	1.10	1.30	1.55	1.75	2.00	2.45				
7/8				.48	.48	.60	.60	.72	.72	.85	1.00	1.20	1.40	1.65	1.90	2.20	2.70	3.30			
1					.55	.70	.70	.85	.85	.97	1.15	1.35	1.55	1.80	2.10	2.55	3.10	3.75	4.50		
1 1/8						.85	.85	1.05	1.05	1.25	1.45	1.65	1.85	2.10	2.50	3.00	3.60	4.35	5.25		
1 1/4						.85	.85	1.05	1.05	1.25	1.45	1.65	1.85	2.10	2.50	3.00	3.60	4.35	5.25		
1 3/8								1.35	1.35	1.60	1.80	2.00	2.20	2.50	3.00	3.60	4.30	5.10	6.00		
1 1/2									1.35	1.60	1.80	2.00	2.20	2.50	3.00	3.60	4.30	5.10	6.00		
1 3/4										1.80	2.05	2.40	2.55	2.90	3.45	4.10	4.85	5.70	6.65		
2											2.30	2.75	2.90	3.35	3.95	4.65	5.45	6.35	7.35		
2 1/4												3.10	3.25	3.70	4.35	5.00	5.85	6.90	8.00		
2 1/2													3.65	4.15	4.90	5.75	6.70	7.75	8.90		
2 3/4														4 75	5.55	6.45	7.45	8.60	9.85		
3															6.50	7.45	8.50	9.70	11.00		

Brass Machine Screws.

Flat, Round or Fillister Head.

Price Per Gross.

Threads to Inch.	56	48	32 40	36	30 32	30 32	30 32	24 32	30	20 24	20 24	18	16 20	18	16	18	14 16		14		16
No.	2	3	4	5	6	7	8	9	10	12	14		16		18	20	22	24	26	28	30
Inches.																					
3/16	.32	.32	.32	.40	.40																
1/4	.32	.32	.32	.40	.40	.58	.58	.86	.86												
5/16	.35	.35	.35	.43	.43	.62	.62	.86	.86												
3/8	.35	.35	.35	.43	.43	.62	.62	.86	.86	1.00	1.55	2.00									
7/16	.39	.39	.39	.48	.48	.68	.68	.95	.95	1.15	1.70	2.10									
1/2	.39	.39	.39	.48	.48	.68	.68	.95	.95	1.15	1.70	2 10	3.00	3.60	4.60	6.00					
9/16	.48	.48	.48	.57	.57	.77	.77	1.05	1.05	1.30	1.90	2.35	3.25	3.90	4.90	6.30					
5/8		.48	.48	.57	.57	.77	.77	1.05	1.05	1.30	1.90	2.35	3.25	3.90	4.90	6.30					
3/4			.60	.70	.70	.90	.90	1.15	1.15	1.50	2.10	2.60	3.50	4.30	5.40	6.70	8.10				
7/8				.80	.80	1.05	1.05	1.35	1.35	1.80	2.30	2.90	3.75	4.70	5.95	7.40	9.00	11.25			
1					.90	1.20	1.20	1.55	1.55	2.10	2.60	3.20	4.00	5.20	6.70	8.50	10.60	13.00	15.75		
1 1/8						1.50	1.50	1.90	1.90	2.55	3 10	3.70	4.50	6.00	7.75	9.90	12.45	15.40	18.75		
1 1/4							1.50	1.90	1.90	2.55	3.10	3.70	4 50	6.00	7.75	9 90	12.45	15.40	18.75		
1 3/8								2.50	2.50	3.00	3.60	4.30	5.00	6.80	8.90	11.55	14.70	18.35	22.50		
1 1/2									2.50	3.00	3.60	4.30	5.00	6.80	8.90	11.55	14.70	18.35	22.50		
1 3/4									3.50	4.15	5.00	5.50	7.50	9.85	12.70	16.05	20.40	24.25			
2										4.90	5.75	6.50	8.25	10.60	13.55	17.10	21.80	26.00			
2 1/4											6.65	7.50	9.25	11.80	14.95	18.70	23.05	28.00			
2 1/2												9.00	10.50	12.50	15.50	19.80	25.35	30.50			
2 3/4													12.00	14.00	17.00	21.80	27.50	33.00			
3														16.00	19.00	24.10	29.70	36.00			

Cold Punched Square and Hexagon Nuts.

Plain and Chamfered and Trimmed.



SQUARE NUT.



HEXAGON NUT.

Square Nuts.

Width of Nut. Inches.	Thickness of Nut. Inches.	Size of Hole. Inches.	Size of Bolt. Inches.	Price per lb. in 200 lb Kegs. Plain Blank. Cents.	Plain Tapped. Cents.	C. & T. Blank. Cents.	C. & T. Tapped. Cents.
1/2	1/4	7/32	1/4	13.8	15.8	20	22
5/8	5/16	9/32	5/16	12.3	13.8	16	17.5
3/4	3/8	11/32	3/8	10.8	11.9	13.5	14.6
7/8	7/16	13/32	7/16	9.3	10.2	11.3	12.2
7/8	1/2	7/16	1/2	9.3	10	11.3	12
1 1/8	9/16	1/2	9/16	8.8	9.4	9.8	10.4
1 1/8	5/8	9/16	5/8	8.8	9.3	9.8	10.3
1 3/8	3/4	21/32	3/4	8.5	8.9	9.2	9.6
1 1/2	7/8	25/32	7/8	8.5	8.9	9.2	9.6
1 3/4	1	7/8	1	8.2	8.6	8.8	9.2
2	1 1/8	1 5/16	1 1/8	8.2	8.6	8.8	9.2
2 1/4	1 1/4	1 1/16	1 1/4	8.6	9	9.3	9.7

Hexagon Nuts.

Width of Nut. Inches.	Thickness of Nut. Inches.	Size of Hole. Inches.	Size of Bolt. Inches.	Price per lb. in 200 lb Kegs. Plain Blank. Cents.	Plain Tapped. Cents.	C. & T. Blank. Cents.	C. & T. Tapped. Cents.
1/2	1/4	7/32	1/4	21	23.5	27	29.5
5/8	5/16	9/32	5/16	17.5	19.5	21.5	23.5
3/4	3/8	11/32	3/8	13.8	15.4	17.5	19.1
7/8	7/16	13/32	7/16	11.5	12.8	14	15.3
7/8	1/2	7/16	1/2	11.5	12.5	14	15
1 1/8	9/16	1/2	9/16	10.6	11.5	12	12.9
1 1/8	5/8	9/16	5/8	10.6	11.3	12	12.7
1 3/8	3/4	21/32	3/4	10.1	10.7	11	11.6
1 1/2	7/8	25/32	7/8	10.1	10.7	11	11.6
1 3/4	1	7/8	1	9.7	10.3	10.6	11.2
2	1 1/4	1 5/16	1 1/8	9.7	10.3	10.6	11.2
2 1/4	1 3/8	1 1/16	1 1/4	10.1	10.7	11.2	11.8

For less than keg lots (200 lbs.) of a size, add—

20 cents per cwt. for 100 lbs. or over.

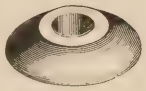
50 " " " less than 100 lbs.

Iron Washers.



IRON WASHER.

Diameter. Inch.	Hole. Inch.	Thickness of Wire Gauge. No.	Bolt. Inch.	Price per lb. in 200-lb. Kegs.	No. in 1 Keg.
9/16	1/4	18	3/16	14.	85200
3/4	5/16	16	1/4	12.2	34800
7/8	3/8	16	5/16	11.4	26200
1	7/16	14	3/8	10.5	14400
1 1/4	1/2	14	7/16	9.7	8400
1 3/8	9/16	12	1/2	9.20	5800
1 1/2	5/8	12	9/16	9.10	4600
1 3/4	11/16	10	5/8	9.	2600
2	13/16	10	3/4	8.80	2200
2 1/4	13/16	9	7/8	8.80	1600
2 1/2	1 1/16	9	1	8.80	1200
2 3/4	1 1/4	9	1 1/8	8.80	888
3	1 3/8	9	1 1/4	9.	900
3 1/4	1 1/2	8	1 3/8	9.	600
3 1/2	1 5/8	8	1 1/2	9.20	570
3 3/4	1 3/4	8	1 5/8	9.20	460
4	1 7/8	8	1 3/4	9.50	432
4 1/4	2	8	1 7/8	9.50	366
4 1/2	2 1/8	8	2	9.50	356



CAST WASHER.

Diameter. Inch.	Hole. Inch.	Thickness. Inch.	Size of Bolt. Inch.	Weight. Lbs.
2 1/2	5/8	11/16	1/2	1/2
2 3/4	3/4	3/4	5/8	5/8
3	7/8	13/16	3/4	3/4
3 1/2	1	7/8	7/8	1 1/4
4	1 1/8	15/16	1	1 5/8
4 1/2	1 1/4	1	1 1/8	2 1/4
5	1 3/8	1 1/8	1 1/4	3
6	1 3/4	1 1/4	1 1/2	5

Special sizes made to order.

Special Size Washers.

In 200-Pound Lots. Smaller Lots Extra.

Diameter. Inch.	Size of Hole. Inch.	Thickness of Wire Gauge. No.	Size Bolt. No.	Price per lb. in 200-lb. Kegs.
1/2	1/4	18	3/16 Rivets	20.
1/2	7/32	18	3/16 Bolts.	20.
9/16	5/16	16	1/4	20.
5/8	9/32 or 5/16	16	1/4	13.5
5/8	3/8	16	5/16	13.2
3/4	3/8	16	3/8	14.5
3/4	7/16	14	3/8	12.4
7/8	7/16	14	7/16	11.2
1	1/2	14	7/16	10.5
1 1/8	1/2	12	1/2	10.
1 1/4	9/16	12	1/2	9.2
1 1/2	9/16	12	9/16	11.
1 1/4	5/8	12	9/16	9.8
1 3/8	5/8	12	5/8	10.8
1 3/8	11/16	10	5/8	9.5
1 1/2	11/16	10	3/4	10.
1 1/2 or 1 5/8	13/16	10	3/4	9.2
1 3/4	13/16	10	7/8	11.
1 3/4	15/16	9	7/8	9.3
2	15/16	9	1	12.5
1 3/4	1 1/16	9	1	10.5
2	1 1/16	9	1	9.3
2 1/4	1 1/16	9	1 1/8	12.5
2	1 1/4	9	1 1/8	11.3
2 1/4	1 1/4	9	1 1/8	9.5
2 1/2	1 1/4	9	1 1/4	10.5
2 1/2	1 3/8	9	1 1/4	10.
2 3/4	1 3/8	9	1 3/8	10.
3	1 1/2	8	1 1/2	10.
3 1/4	1 5/8	8	1 3/4	10.5
3 3/4	1 7/8	8	1 7/8	10.5
4	2	8	2	11.
4	2 1/8	8	2	10.5
4 1/4	2 1/8	8	2 1/4	10.5
4 1/2	2 3/8	7	2 1/2	12.5
4 1/2	2 5/8	7	2 3/4	12.5
4 3/4	2 7/8	6	3	12.5
5	3 1/8	6	3 1/4	14.
5 1/2	3 3/8	6	3 1/2	14.
6	3 5/8	6		

Square Washers of almost any dimension promptly furnished. Net prices given on receipt of specifications.

Coach and Lag Screws.



GIMLET POINT COACH SCREW.

Price per 100.

Length in Inches.	Diameter							
	5/16	3/8	7/16	1/2	9/16 and 5/8	3/4	7/8	1
1½	2.25	2.70	3.15	3.75	----	----	----	----
2	2.45	2.96	3.47	4.11	5.00	----	----	----
2½	2.65	3.22	3.79	4.47	5.50	7.90	----	----
3	2.85	3.48	4.11	4.83	6.00	8.60	12.50	----
3½	3.05	3.74	4.43	5.19	6.50	9.30	13.50	18.20
4	3.25	4.00	4.75	5.55	7.00	10.00	14.50	19.50
4½	3.45	4.26	5.07	5.91	7.50	10.70	15.50	20.80
5	3.65	4.52	5.39	6.27	8.00	11.40	16.50	22.10
5½	3.85	4.78	5.71	6.63	8.50	12.10	17.50	23.40
6	4.05	5.04	6.03	6.99	9.00	12.80	18.50	24.70
6½	4.25	5.30	6.35	7.35	9.50	13.50	19.50	26.00
7	4.45	5 56	6.67	7 71	10.00	14.20	20.50	27.30
7½	4.65	5.82	6.99	8.07	10.50	14.90	21.50	28.60
8	4.85	6.08	7.31	8.43	11.00	15.60	22.50	29.90
9	5.25	6.60	7.95	9.15	12.00	17.00	24.50	32.50
10	5.65	7.12	8.59	9.87	13.00	18.40	26.50	35.10
11	6.05	7.64	9.23	10.59	14.00	19.80	28.50	37.70
12	6.45	8.16	9.87	11.31	15.00	21.20	30.50	40.30

The following extras are to be understood as a part of this list: Hexagon Heads, 10 per cent. extra; Tee Heads, 20 per cent. extra; Skein Screws, list price, same as Lag Screws.

Expansion Eye Bolts, Hitching Ring Bolts and Hooks.



EYE BOLT.



HITCHING RING BOLT.



EXPANSION HOOK.

Eye Bolts.

Diameter of Shank	3/8	1/2	5/8	3/4	7/8	1
" " Eye inside	3/4	1	1½	1½	2	2
Length " Shank, inches	4 and 6	4 and 6	6	6	12	12
Per 100	20.00	30.00	43.00	65.00	100.00	120.00

Hitching Ring Bolts.

Size	3/8	1/2
Length of Expansion into Wall	4	4
Inside Diameter of Ring	1¾	2
Per 100	30.00	40.00

Other sizes to order.

Expansion Hook.

Size	3/8	1/2
Length of Shank	3	4
Per 100	20.00	30.00

Furnished any size desired.

Single Expansion Bolts.


No. 1.


No. 2.


No. 5.


No. 7.


No. 23.


No. 25.

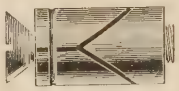
We illustrate above a few styles of Single Expansion Bolts, but would call attention to the fact that all the Double Expansion Bolts shown on preceding page can be furnished in single expansion pattern, and are adaptable to the same service as described for the Double Expansion. List prices below apply to Single Expansion Bolts corresponding with the respective numbers of Double Expansion Bolts shown on preceding page.

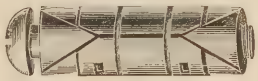
Price per 100.

Length in Inches.	Diameter.							
	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
1 1/2	8.00	9.50	----	----	---	----	----	----
2	8.20	9.60	12.00	18.00	24.00	----	---	---
2 1/2	8.30	9.65	12.25	18.25	24.50	---	----	----
3	8.40	9.75	12.50	18.50	25.00	----	----	----
3 1/2	8.50	9.90	12.75	18.75	25.50	34.00	----	----
4	8.60	10.00	13.00	19.00	26.00	34.50	43.00	54.00
4 1/2	8.70	10.25	13.25	19.25	26.50	34.75	43.50	54.50
5	8.80	10.50	13.50	19.50	27.00	35.00	44.00	55.00
6	----	11.00	14.00	20.00	28.00	35.50	45.00	56.00
7	----	----	----	20.50	28.75	36.00	46.00	57.00
8	----	----	----	21.00	29.25	37.00	47.00	58.00
9	----	----	----	21.50	30.00	38.00	48.00	59.00
10	----	----	----	22.00	30.75	39.00	49.00	60.00
11	----	----	----	22.75	31.50	40.00	50.00	61.00
12	----	----	----	23.50	32.00	41.00	51.00	62.00
Length of Expansion	1 & 1 3/8	1 1/2	1 3/4	1 3/4	2	3	3 3/4	3 3/4
Size Hole to receive Expansion	1/2	9/16	11/16	7/8	1	1 3/16	1 3/8	1 7/16

Brass Single and Double Expansion Bolts.


STYLE V. SINGLE.


STYLE S. SINGLE.


STYLE Q. DOUBLE.


STYLE Y. DOUBLE.

Brass Single Expansion Bolts.

Price per 100.

Length in Inches. Nos. of Screw Sizes	9 or 10	12 or 14	18	24	1/2, 5/8 and 3/4 to order.
	3/16	1/4	5/16	3/8	
3/4	8.50	----	---	----	
1	8.60	11.00	----	----	
1 1/4	8.70	11.50	----	20.00	
1 1/2	8.90	12.00	13.50	20.50	
1 3/4	9.00	12.50	14.00	21.00	
2	9.20	13.00	14.50	21.50	
2 1/4	9.40	13.50	15.00	22.00	
2 1/2	9.60	14.00	15.50	22.50	
2 3/4	9.80	14.50	16.00	23.00	
3	10.00	15.00	16.50	24.00	
Length of Expansion	3/4	1 and 1 3/8	1 3/8	1 and 1 3/4	
Size Hole to receive Expansion	3/8	7/16	9/16	11/16	

Brass Double Expansion Bolts.

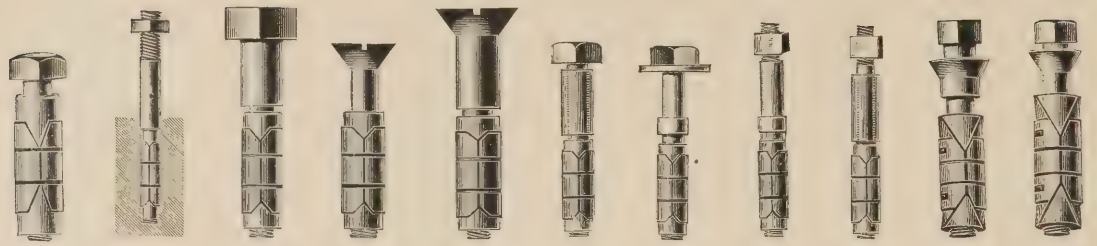
Price per 100.

Length in Inches. Nos. of Screw Sizes	14	18	24	1/2, 5/8 and 3/4 to order.
	1/4	5/16	3/8	
1 1/2	13.50	15.50	25.00	
1 3/4	14.00	16.00	26.00	
2	14.50	16.50	26.50	
2 1/4	15.00	17.00	27.00	
2 1/2	15.50	17.50	27.50	
2 3/4	16.00	18.00	28.00	
3	17.00	18.50	29.00	
Length of Expansion	1 1/2	1 7/8	2 3/8	
Size Hole to receive Expansion	1/2	5/8	11/16	

NOTE.—If Bolts require brass sleeves they will be extra, according to length.

Nickel plated heads extra.

Double Expansion Bolts.



No. 13. No. 14. No. 15. No. 16. No. 17. No. 18. No. 19. No. 20. No. 21. No. 25. No. 30.

No. 13 represents the latest improvements in Expansion Bolts, being lock-nutted to the cases, preventing the nut from slipping away from the jaws or sleeves. This style of expansion is now furnished on all numbers requiring the single and double expansion. No. 13 is the style usually adopted in all U. S. contract work.

No. 16 has countersunk head, and can be furnished from ¼ inch to 1 inch in diameter.

No. 18 is made in any length, so that expansion parts can be used in any depth of hole.

Nos. 19, 20 and 21 can be furnished from ¼-inch to 2-inch diameter and are made in any length, so that the expansion parts can be used in any depth of hole. Space between nut and gas pipe sleeve on No. 21 is the thickness of the material to be fastened up and applies to No. 18 also.

No. 20 is known as a Newell post or collar Bolt. When fastened into the wall they become standing bolts and can be used for hanging shafting, etc.

No. 19 is the same as No. 21 except that it has head in place of nut end; in most cases we recommend No. 20. Nos. 14, 15 and 17 will allow the fastenings at any depth by making the upper part of the bolt longer or shorter, as shown in No. 14. These are used where the strain of the work will be crosswise; where the strain is lengthwise of the bolt No. 18 should be used. These numbers are not made smaller than ½ inch under the head, as this gives only $\frac{5}{16}$-inch screw in the expansion parts.

Nos. 25 and 30 are used in constructional work for prisons, asylums, etc. After the work is fastened up the square part of the head is cut off, leaving a flat head that cannot be removed. No. 30 is made from ⅜-inch to 1-inch diameter, No. 25 from ½-inch to 1-inch diameter, and any length. They are especially adapted for work that is already in place.

Price per 100.

Length, Inches.	Diameter. ¼	$\frac{5}{16}$	⅜	$\frac{7}{16}$	½	⅝	¾	⅞	1
1¾	8.95	----	----	----	----	----	----	----	----
2	9.00	10.00	----	----	----	----	----	----	----
2½	9.05	10.05	12.40	----	----	----	----	----	----
3	9.10	10.10	12.50	16.60	20.00	----	----	----	----
3½	9.15	10.15	13.00	16.80	20.15	27.25	----	----	----
4	9.20	10.20	13.70	17.00	20.30	27.50	40.00	----	----
4½	9.25	10.25	13.80	17.25	20.45	27.75	40.30	----	----
5	9.30	10.30	13.90	17.50	20.60	28.00	40.60	52.00	----
5½	9.35	10.35	14.00	17.75	20.75	28.25	40.90	52.43	74.45
6	9.40	10.40	14.10	18.00	20.90	28.50	41.20	52.86	75.00
6½	----	----	14.20	18.10	21.05	28.75	41.50	53.29	75.55
7	----	----	14.30	18.20	21.20	29.00	41.80	53.72	76.10
7½	----	----	14.40	18.30	21.35	29.25	42.10	54.15	76.65
8	----	----	14.50	18.40	21.50	29.50	42.40	54.58	77.20
9	----	----	----	----	21.65	29.75	42.70	55.01	77.75
10	----	----	----	----	21.80	30.00	43.00	55.44	78.30
11	----	----	----	----	22.00	30.50	43.50	56.00	79.00
12	----	----	----	----	23.50	31.00	44.00	57.00	80.00
Length of Expansion	1½	1⅞	2⅜	2½	2⅝	3¼	4	4¾	5
Size Hole to receive Expansion	½	$\frac{9}{16}$	$\frac{11}{16}$	⅞	⅞	1	1¼	1½	1⅝



In addition to the above we furnish the following sizes to order: 1¼, 1½, 1¾ inches in diameter, any length. These sizes have parallel expansions on three sides, in place of two as on Bolts up to 1-inch diameter.

Thickness of material to be fastened should always be stated when ordering Bolts. Order Bolts by the numbers.

The size of a Bolt is always understood to be the diameter of the iron of which it is made, not of the expansion parts.

Wedge Head Double Expansion Screw Bolts.



DOUBLE EXPANSION.

Price per 100.

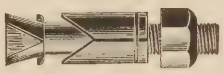
Length over All.	Diameter. ¼	5/16	⅜	7/16	½	⅝	¾	⅞	1
2½	13.00	14.25	----	----	----	----	----	----	----
3	13.05	14.30	17.50	22.00	----	----	----	----	----
3½	13.10	14.40	17.60	22.15	25.75	33 20	----	----	----
4	13.20	14.50	17.70	22.30	26.00	33.40	----	----	----
4½	----	14.60	17.80	22.45	26.25	33.60	48.25	----	----
5	----	14.70	17.90	22.60	26.50	33.80	48.50	----	----
5½	----	14.75	17.95	22.70	26.60	34.00	48.75	52.43	74.45
6	----	14.80	18.00	22.80	26.70	34.20	49.00	52.86	75.00
6½	----	----	18.10	23.00	26.80	34.40	49.25	53.29	75.55
7	----	----	18.20	23.25	26.90	34.60	49.50	53.72	76.10
7½	----	----	18.25	23.50	27.10	34.80	49.75	54.15	76.65
8	----	----	18.30	23.75	27.20	35.00	50.00	54.58	77.20
9	----	----	18.40	24.00	27.30	35.20	50.50	55.01	77.75
10	----	----	18.50	24.50	27.40	35.40	51.00	55.44	78.30
11	----	----	----	----	28.00	36.00	51.50	56.00	79.00
12	----	----	----	----	28.50	36.50	52.00	56.50	80.00
Length of Expansion	1½	1⅞	2⅜	2½	2⅝	3	4	4¾	5
Size Hole to receive Expansion	7/16	9/16	¾	⅞	⅞	1	1⅛	1⅜	1⅝



Length of Expansion.

In addition to the above we furnish the following sizes: 1¼, 1½, 1¾, 2 inches in diameter, any length.

Wedge Head Single Expansion Bolts.



SINGLE EXPANSION.

Price per 100.

Length over All.	Diameter. ¼	5/16	⅜	½	⅝	¾	⅞	1
2	8.20	9.60	----	----	----	----	----	----
2½	8.30	9.65	12.25	18.25	24.50	----	----	----
3	8.40	9.75	12.50	18.50	25.00	----	----	----
3½	8.50	9.90	12.75	18.75	25.50	----	----	----
4	8.60	10.00	13.00	19.00	26.00	34.50	43.00	54.00
4½	8.70	10.25	13.25	19.25	26.50	34.75	43.50	54.50
5	8.80	10.50	13.50	19.50	27.00	35.00	44 00	55.00
6	----	11.00	14.00	20.00	28.00	35.50	45.00	56.00
7	----	----	----	20.50	28.75	36.00	46.00	57.00
8	----	----	----	21.00	29.25	37.00	47.00	58.00
9	----	----	----	21.50	30.00	38.00	48.00	59.00
10	----	----	----	22.00	30.75	39.00	49.00	60.00
11	----	----	----	22.75	31.50	40.00	50.00	61.00
12	----	----	----	23.50	32.00	41.00	51.00	62.00
Length of Expansion	1½	1½	1¾	1¾	2	3	3¾	3¾
Size Hole to receive Expansion	½	9/16	11/16	⅞	1	1⅛	1⅜	1⅞



Length of Expansion.

In addition to the above we furnish the following sizes: 1¼, 1½, 1¾, 2 inches in diameter, any length.

Chains.



NO. 16.—IRON JACK CHAIN.

Iron Jack Chain, No	6	7	8	9	10	11	12
Per Dozen Yards	1.30	1.05	.95	.90	.80	.55	.44
Iron Jack Chain, No	13	14		15	16	17	18
Per Dozen Yards	.42	.40		.35	.30	.30	.28
Iron Jack Chain, No	19	20		21	22	23	24
Per Dozen Yards	.27	.26		.25	.25	.25	.25



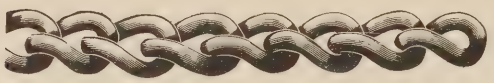
NO. 8.—BRASS JACK CHAIN.

Brass Jack Chain, No	6	7	8	9	10	11	
Per Dozen Yards	8.00	6.35	5.25	4.25	3.50	2.55	
Brass Jack Chain, No	12	13	14	15	16	17	
Per Dozen Yards	2.05	1.70	1.35	1.00	.86	.82	
Brass Jack Chain, No	18	19	20	21	22	23	24
Per Dozen Yards	.60	.54	.50	.45	.40	.40	.40

Coil Chain, Self-Colored or Black.



CLOSE LINK, STRAIGHT.



TWISTED.

Table of Weights and Strength of Iron Chains.

B. B. Chain.

Diameter of Iron. Inch.	Average Weight per Foot. Lbs.	Breaking Strain. Lbs.	Diameter of Iron. Inch.	Average Weight per Foot. Lbs.	Breaking Strain. Lbs.
3/16	.42	1731	1	10.	49280
1/4	.91	3069	1 1/16	11.3	52790
5/16	1.22	4794	1 1/8	12.5	59226
3/8	1.5	6922	1 3/16	14.	65960
7/16	2.	9408	1 1/4	15.5	73114
1/2	2.5	12320	1 3/8	18.5	88301
9/16	3.2	15590	1 1/2	22.	105280
5/8	4.1	19219	1 5/8	25.5	123514
11/16	5.	23274	1 3/4	29.5	143293
3/4	5.8	27687	1 7/8	33.5	164505
13/16	6.6	32307	2	38.	187152
7/8	7.7	37632	2 1/4	48.5	224448
15/16	8.9	43277	2 1/2	60.	277088

B. B. B. Crane Chain.

Diameter of Iron. Inch.	Average Weight per Foot. Lbs.	Breaking Strain. Lbs.	Diameter of Iron. Inch.	Average Weight per Foot. Lbs.	Breaking Strain. Lbs.
3/8	1.5	8960	7/8	7.7	51520
7/16	2.	13440	15/16	8.9	58240
1/2	2.5	15680	1	10.	62720
9/16	3.2	22400	1 1/8	12.5	82880
5/8	4.1	26880	1 1/4	15.5	100800
11/16	5.	31360	1 3/8	18.5	120960
3/4	5.8	38080	1 1/2	22.	143360
13/16	6.6	44800	----	----	- -

Proof = 2/3 Breaking Strain. Safe Working Load = 1/4 Breaking Strain.

Rivets and Burs.



¼ inch 5/16 ⅜ 7/16 ½ 9/16 ⅝ 11/16

Copper Rivets and Burs.

All lengths from ¼ to 1½ inch or assorted lengths from ⅜ to ¾ inch in 1 pound boxes.

No	7	8	9	10	11	12	13	14	15
Per lb	.49	.50	.52	.54	.56	.58	.60	.65	.70

If ½ pound boxes are wanted, add 1 cent per pound, net.



1 lb. 1¼ lb. 1½ lb. 1¾ lb. 2 lb. 2½ lb. 3 lb. 4 lb. 5 lb. 6 lb. 7 lb. 8 lb. 10 lb.

In Papers.

Price per 1,000.

	Black.	Tinned.		Black.	Tinned.
8 oz.	.20	.25	3½ lb.	.70	1.05
10 "	.22	.28	4 "	.76	1.16
12 "	.24	.31	5 "	.90	1.40
14 "	.26	.35	6 "	1.08	1.68
1 lb.	.27	.37	7 "	1.26	1.97
1¼ "	.29	.42	8 "	1.44	2.24
1½ "	.33	.48	9 "	1.53	2.43
1¾ "	.37	.55	10 "	1.75	2.75
2 "	.42	.62	12 "	1.98	3.18
2½ "	.55	.80	14 "	2.31	3.71
3 "	.60	.90	16 "	2.64	4.24

Oval or Countersunk Heads, or extra lengths, 10 cents per 1000 in addition to the above prices.

Tinners' Iron Rivets.

In Bulk.

Price per Pound.

		Black.	Tinned.
	8 oz.	.38	.48
	10 "	.34	.44
	12 "	.31	.41
	14 "	.29	.39
	1 lb.	.26	.36
	1¼ "	.23	.33
	1½ "	.22	.32
	1¾ "	.21	.31
	2 "	.20	.30
	2½ "	.20	.30
	3 "	.19	.29
Barrel Rivets.	3½ lb.	.19	.29
	4 "	.18	.28
	5 "	.18	.28
	6 "	.17	.27
	7 "	.17	.27
	8 "	.17	.27
	9 "	.17	.27
	10 "	.16	.26
	12 "	.15½	.26
	14 "	.15½	.26
	16 "	.15½	.26



FLAT HEAD. ROUND HEAD. COUNTERSUNK HEAD. WAGON BOX HEAD.

Iron Rivets in Bulk.

Price per Pound.

Size.	Length. ½	15/32	7/16	13/32	⅜	11/32	5/16	9/32	¼	7/32	3/16	5/32	⅛	3/32
7/16	.15	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8	.15	.16	--	--	--	--	--	--	--	--	--	--	--	--
11/32	.15	.16	.16	--	--	--	--	--	--	--	--	--	--	--
5/16	.15½	.16½	.16½	.16½	.16½	--	--	--	--	--	--	--	--	--
1	.15½	.16½	.16½	.16½	.16½	.16½	--	--	--	--	--	--	--	--
2	.15½	.16½	.16½	.16½	.16½	.17	.17	--	--	--	--	--	--	--
3	.15½	.16	.17	.17	.17	.17	.18	.18	.18	--	--	--	--	--
¼	.15½	.16	.17	.17	.17	.17	.18	.18	.18	.19	.19	--	--	--
4	.15½	.17	.17	.18	.18	.18	.18	.18	.18	.19	.19	.20	--	--
5	.16	.17	.18	.18	.18	.18	.19	.20	.20	.21	.21	.22	.22	.23
6	.16	.17	.18	.18	.19	.19	.20	.20	.20	.21	.22	.23	.23	.23
9/16	.16	.17	.18	.18	.19	.19	.20	.20	.20	.21	.22	.23	.24	.24
7	.16½	.18	.18	.18	.19	.19	.20	.20	.21	.22	.23	.24	.25	.25
8	.17	.18	.19	.19	.20	.20	.21	.21	.22	.23	.24	.25	.26	.26
9	.18	.19	.20	.20	.21	.21	.23	.23	.23	.24	.25	.27	.29	.27
10	.19	.20	.21	.22	.23	.25	.27	.28	.28	.30	.33	.35	.37	.30
11	.20	.22	.24	.26	.27	.28	.30	.31	.31	.33	.37	.40	.42	.38
12	.21	.24	.26	.28	.29	.30	.32	.34	.35	.36	.41	.45	.50	.45
13	.25	.27	.30	.33	.34	.35	.37	.39	.40	.41	.45	.50	.55	.55
14	.27	.30	.35	.38	.40	.45	.50	.52	.55	.58	.58	.60	.63	.60

Rivets made from smaller wire than No. 14, all lengths, 70 cents per pound.

Extras:

Tinning, 2½ cents per pound, net.
Tin Plating, 1 cent per pound, net.
Coppering, 1 cent per pound, net.
Shoulder Rivets, 2 cents per pound, added to list.
Packing in 25 pound boxes, 20 cents per 100 pounds, net.
Packing in 10 and 5 pound packages, 30 cents per 100 pounds, net.
Packing in 1 pound packages, 50 cents per 100 pounds net.

Angle and Tee Iron, Channels, and I Beams.



ANGLE IRON.

Weight of One Foot in Length of Angle Iron. Even Sides.

Inches.	Thickness. ⅛ in. Lbs.	³⁄₁₆ in. Lbs.	¼ in. Lbs.	⁵⁄₁₆ in. Lbs.	⅜ in. Lbs.	½ in. Lbs.	⅝ in. Lbs.	¾ in. Lbs.
¾ x ¾	.60	.90	----	----	----	----	----	----
⅞ x ⅞	.70	1.07	----	----	----	----	----	----
1 x1	.80	1.20	1.60	----	----	----	----	----
1¼x1¼	1.00	1.50	2.00	2.50	----	----	----	----
1½x1½	----	1.80	2.40	3.00	3.60	----	----	----
1¾x1¾	----	2.10	2.80	3.50	4.20	----	----	----
2 x2	----	----	3.20	4.00	4.80	6.40	----	----
2¼x2¼	----	----	3.50	4.50	5.50	7.50	----	----
2½x2½	----	----	4.00	5.00	6.00	8.00	----	----
3 x3	----	----	----	6.00	7.00	9.33	11.67	----
3½x3½	----	----	----	----	8.00	11.00	14.00	----
4 x4	----	----	----	----	9.33	13.00	16.00	19.33
5 x5	----	----	----	----	----	16.00	20.00	24.00
6 x6	----	----	----	----	----	19.16	24.00	29.00

Weight of One Foot in Length of Angle Iron. Uneven Sides.

Inches.	Thickness. ³⁄₁₆ in. Lbs.	¼ in. Lbs.	⅝ in. Lbs.	⅜ in. Lbs.	½ in. Lbs.	⅝ in. Lbs.	¾ in. Lbs.	1 in. Lbs.
1⅜x1⅛	1.40	1.86	2.33	----	----	----	----	----
2 x1¾	2.17	2.90	3.66	----	----	----	----	----
2¼x1½	2.17	2.90	3.66	----	----	----	----	----
3 x2	----	4.00	5.00	5.77	7.50	----	----	----
3 x2½	----	----	5.43	6.40	8.33	----	----	----
3½x2½	----	----	5.96	7.03	9.16	----	----	----
3½x3	----	----	----	7.66	10.00	12.26	----	----
4 x3	----	----	----	8.30	10.83	13.33	----	----
4 x3½	----	----	----	8.90	11.66	14.33	----	----
4½x3	----	----	----	8.90	11.66	14.33	----	----
5 x3	----	----	----	9.53	12.50	15.33	18.10	----
5 x3½	----	----	----	10.17	13.33	16.40	19.36	----
5½x3½	----	----	----	10.76	14.17	17.43	----	----
6 x3½	----	----	----	----	15.00	18.50	21.86	28.33
6 x4	----	----	----	----	15.83	19.53	23.13	30.00
7 x3½	----	----	----	----	----	20.56	24.36	31.66



TEE IRON.

Weight Per Foot of T Iron.

Flange.	Stem.	Thickness.	Pounds.	Flange.	Stem.	Thickness.	Pounds.	Flange.	Stem.	Thickness.	Pounds.
1 x1	x1	⅛	.85	2 x1½	x1¼	3.00	3½	x3½	x⅜	10.00	
---x1	x⅜	1.20	---x2	x¼	3.30	---x3½	x½	11.30			
1¼x1¼	x 1/16	1.50	2¼x2¼	x¼	3.70	---x3	x⅜	9.30			
---x1¼	x¼	2.00	2½x2½	x 5/16	5.40	---x3	x½	11.30			
1½x1¼	x⅜	1.70	---x2½	x⅜	6.10	---x4	x½	13.80			
---x1¼	x 5/16	2.90	---x2¾	x 1/16	6.60	4 x4	x½	14.00			
---x1½	x 1/16	1.80	---x3	x 5/16	6.90	---x4½	x⅜	13.50			
---x1½	x¼	2.50	3 x2½	x 5/16	6.00	---x4½	x½	15.00			
1¾x1¼	x⅜	1.90	---x2½	x⅜	6.50	5 x4	x⅜	14.00			
---x1¾	x 1/16	2.80	---x3	x 5/16	6.50	---x4	x½	16.30			

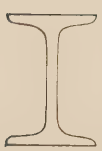


CHANNEL IRON.

Weight Per Foot of Groove and Channel Iron.

Size. Inch.	Flange. Inch.	Thickness. Inch.	Weight. Pounds.	Size. Inch.	Flange. Inch.	Thickness. Inch.	Weight. Pounds.
½	¼	⅛	.26	3½	1¾	5/16	8.12
5/8	5/16	3/32	.39	4	1¾	¼	7.00
¾	9/32	⅛	.47	5	2	¼	8.20
⅞	3/8	⅛	.59	6	2	¼	10.00
1	3/8	⅛	.66	7	2¼	5/16	11.60
1¼	½	⅛	1.05	8	2½	¼	13.50
1½	½	5/32	1.11	9	2½	⅜	16.70
1¾	½	3/16	1.13	9	2¾	½	23.30
2	11/16	5/16	2.66	10	2⅞	½	25.00
2¼	1⅜	¼	3.80	12	3	½	29.40
2½	1½	⅜	5.50	13	3	½	31.00
3	1½	5/16	5.00	15	3½	½	38.30

Weights and Dimensions of Steel I Beams.



I BEAM.

Size. Inches.	Weight. Per Foot. Pounds.	Width of Flange. Inches.	Thickness of Web. Inches.
3	5.50	2.33	.17
	6.50	2.42	.26
	7.50	2.52	.36
4	7.50	2.66	.19
	8.50	2.73	.26
	9.50	2.80	.33
	10.50	2.88	.41
5	9.75	3.00	.21
	12.25	3.14	.35
	14.75	3.29	.50
6	12.25	3.33	.23
	14.75	3.45	.35
	17.25	3.57	.47
7	15.	3.66	.25
	17.50	3.76	.35
	20.	3.87	.46
8	17.75	4.00	.27
	20.25	4.09	.36
	22.75	4.18	.45
	25.25	4.27	.54
9	21.	4.33	.29
	25.	4.46	.42
	30.	4.62	.58
	35.	4.78	.74
10	25.	4.66	.31
	30.	4.80	.45
	35.	4.95	.60
	40.	5.10	.60
12	31.50	5.00	.35
	35.	5.08	.43
	40.	5.20	.55
12	40.	5.25	.46
	45.	5.37	.58
	50.	5.49	.70
	55.	5.61	82

Hoop, Scroll, Band, Rods and Small Flat Iron.

Weight of Ten Feet in Length.

Size. In. No.	Weight. Pounds.	Size. In. No.	Weight. Pounds.	Size. In. No.	Weight. Pounds.	Size. In. No.	Weight. Pounds
1/2 x 22	.47	7/8 x 20	1.05	1 1/2 x 16	3.20	2 3/4 x 12	9.52
x 21	.53	x 18	1.40	x 14	3.99	x 10	11.75
x 20	.60	x 16	1.87	x 12	5.19	x 8	14.66
x 18	.80	x 14	2.33	x 10	6.41	x 6	17.60
x 16	1.07	x 12	3.03	x 8	8.00	3 x 12	10.38
x 14	1.33	x 10	3.74	x 6	9.60	x 10	12.82
x 12	1.73	x 6	5.60	1 3/4 x 16	3.74	x 8	16.00
x 10	2.14	1 x 22	.93	x 14	4.66	x 6	19.20
x 6	3.20	x 20	1.20	x 12	6.06	3 1/2 x 12	12.12
5/8 x 22	.59	x 18	1.60	x 10	7.48	x 10	14.95
x 20	.75	x 16	2.13	x 8	9.33	x 8	18.66
x 18	1.00	x 14	2.66	x 6	11.20	x 6	22.40
x 16	1.34	x 12	3.46	2 x 16	4.26	4 x 12	13.84
x 14	1.66	x 10	4.27	x 14	5.32	x 10	17.08
x 12	2.16	x 6	6.40	x 12	6.92	x 8	21.32
x 10	2.68	1 1/8 x 18	1.80	x 10	8.54	x 6	25.60
x 8	3.33	x 16	2.40	x 8	10.66	4 1/2 x 12	15.58
x 6	4.00	x 14	3.00	x 6	12.80	x 10	19.22
3/4 x 22	.71	x 12	3.90	2 1/4 x 14	5.98	x 8	24.00
x 20	.90	x 10	4.80	x 12	7.79	x 6	28.80
x 18	1.20	x 6	7.20	x 10	9.61	5 x 12	17.32
x 16	1.61	1 1/4 x 18	2.00	x 8	12.00	x 10	21.36
x 14	2.00	x 16	2.66	x 6	14.40	x 8	26.66
x 12	2.60	x 14	3.32	2 1/2 x 12	8.66	x 6	32.00
x 10	3.21	x 12	4.33	x 10	10.68	6 x 12	20.76
x 8	4.00	x 10	5.34	x 8	13.33	x 10	25.64
x 6	4.80	x 6	8.00	x 6	16.00	x 6	38.40

Rounds. Inch.	Pounds.	Squares. Inch.	Pounds.	Flats.	Pounds.	Flats.	Pounds.
3/16	.92	3/16	1.17	1/2 x 1/4	4.17	7/8 x 1/4	7.29
1/4	1.64	1/4	2.08	x 5/16	5.21	x 5/16	9.10
5/16	2.56	5/16	3.26	x 3/8	6.25	x 3/8	10.94
3/8	3.68	3/8	4.69	5/8 x 1/4	5.21	x 7/16	12.76
7/16	5.01	7/16	6.38	x 5/16	6.51	x 1/2	14.61
1/2	6.54	1/2	8.33	x 3/8	7.81	x 5/8	18.23
9/16	8.28	9/16	10.60	x 1/2	10.44	1 x 1/4	8.33
5/8	10.20	5/8	13.00	3/4 x 1/4	6.25	x 5/16	10.40
11/16	12.40	11/16	15.80	x 3/8	9.38	x 3/8	12.50
3/4	14.70	3/4	18.70	x 1/2	12.50	x 1/2	16.70

Weight of One Foot of Round Iron.

Size. Inches.	Weight per Foot. Pounds.	Size. Inches.	Weight per Foot. Pounds.	Size. Inches.	Weight per Foot. Pounds.	Size. Inches.	Weight per Foot. Pounds.
1/16	.041	1 1/8	3.31	2 1/4	13.25	4 1/4	47.29
3/16	.092	1 3/16	3.69	2 3/8	14.77	4 3/8	50.11
1/4	.164	1 1/4	4.09	2 1/2	16.36	4 1/2	53.01
5/16	.256	1 5/16	4.51	2 5/8	18.04	4 5/8	56.00
3/8	.368	1 3/8	4.95	2 3/4	19.80	4 3/4	59.07
7/16	.501	1 7/16	5.41	2 7/8	21.64	4 7/8	62.22
1/2	.654	1 1/2	5.89	3	23.56	5	65.45
9/16	.828	1 9/16	6.39	3 1/8	25.57	5 1/8	68.76
5/8	1.02	1 5/8	6.91	3 1/4	27.65	5 1/4	72.16
11/16	1.24	1 11/16	7.45	3 3/8	29.82	5 3/8	75.64
3/4	1.47	1 3/4	8.02	3 1/2	32.07	5 1/2	79.19
13/16	1.73	1 13/16	8.60	3 5/8	34.40	5 5/8	82.83
7/8	2.00	1 7/8	9.20	3 3/4	36.82	5 3/4	86.56
15/16	2.30	1 15/16	9.83	3 7/8	39.31	5 7/8	90.36
1	2.62	2	10.47	4	41.89	6	94.25
1 1/16	2.95	2 1/8	11.82	4 1/8	44.55		

Square and Flat Iron.

Weight of One Foot.

Size. Inches.	Weight per Foot. Pounds.	Size Inches.	Weight per Foot. Pounds.	Size. Inches.	Weight per Foot. Pounds.	Size. Inches.	Weight per Foot. Pounds.
1/8	.052	1 1/8	4.22	2 1/4	16.88	4 1/4	60.21
3/16	.117	1 3/16	4.70	2 3/8	18.80	4 3/8	63.80
1/4	.208	1 1/4	5.21	2 1/2	20.83	4 1/2	67.50
5/16	.326	1 5/16	5.74	2 5/8	22.97	4 5/8	71.30
3/8	.469	1 3/8	6.30	2 3/4	25.21	4 3/4	75.21
7/16	.638	1 7/16	6.89	2 7/8	27.55	4 7/8	79.22
1/2	.833	1 1/2	7.50	3	30.00	5	83.33
9/16	1.06	1 9/16	8.14	3 1/8	32.55	5 1/8	87.55
5/8	1.30	1 5/8	8.80	3 1/4	35.21	5 1/4	91.88
11/16	1.58	1 11/16	9.49	3 3/8	37.97	5 3/8	96.30
3/4	1.87	1 3/4	10.21	3 1/2	40.83	5 1/2	100.80
13/16	2.20	1 13/16	10.95	3 5/8	43.80	5 5/8	105.50
7/8	2.55	1 7/8	11.72	3 3/4	46.88	5 3/4	110.20
15/16	2.93	1 15/16	12.51	3 7/8	50.05	5 7/8	115.10
1	3.33	2	13.33	4	53.33	6	120.00
1 1/16	3.76	2 1/8	15.05	4 1/8	56.72		

Flat Iron.

Weight of One Foot.

Size.	Weight. Pounds.	Size.	Weight. Pounds.	Size.	Weight. Pounds.	Size.	Weight. Pounds.
1 x 3/16	.625	1 1/2 x 7/16	2.19	2 x 7/16	2.92	2 3/4 x 3/16	1.72
x 1/4	.833	x 1/2	2.50	x 1/2	3.33	x 1/4	2.29
x 5/16	1.04	x 9/16	2.81	x 9/16	3.75	x 5/16	2.86
x 3/8	1.25	x 5/8	3.13	x 5/8	4.17	x 3/8	3.44
x 7/16	1.46	x 3/4	3.75	x 3/4	5.00	x 1/2	4.58
x 1/2	1.67	x 7/8	4.38	x 7/8	5.83	x 5/8	5.73
x 9/16	1.88	x 1	5.00	x 1	6.67	x 3/4	6.88
x 5/8	2.08	x 1 1/4	6.25	x 1 1/8	7.50	x 7/8	8.02
x 3/4	2.50	1 5/8 x 1/4	1.35	x 1 1/4	8.33	x 1	9.17
x 7/8	2.92	x 3/8	2.03	x 1 3/8	9.17	x 1 1/8	10.31
1 1/8 x 3/16	.70	x 7/16	2.37	x 1 1/2	10.00	x 1 1/4	11.46
x 1/4	.93	x 1/2	2.71	x 1 3/4	11.67	x 1 1/2	13.75
x 5/16	1.17	x 9/16	3.04	2 1/4 x 3/16	1.41	x 1 3/4	16.04
x 3/8	1.40	x 5/8	3.38	x 1/4	1.88	x 2	18.33
x 7/16	1.64	x 11/16	3.72	x 5/16	2.34	x 2 1/4	20.63
x 1/2	1.87	x 3/4	4.06	x 3/8	2.81	x 2 1/2	22.91
x 9/16	2.11	x 7/8	4.74	x 1/2	3.75	3 x 3/16	1.88
x 5/8	2.34	x 1	5.41	x 5/8	4.69	x 1/4	2.50
x 3/4	2.81	x 1 1/4	6.77	x 3/4	5.63	x 5/16	3.13
x 7/8	3.28	1 3/4 x 3/16	1.09	x 7/8	6.56	x 3/8	3.75
x 1	3.75	x 1/4	1.46	x 1	7.50	x 1/2	5.00
1 1/4 x 3/16	.781	x 5/16	1.82	x 1 1/8	8.44	x 5/8	6.25
x 1/4	1.04	x 3/8	2.19	x 1 1/4	9.38	x 3/4	7.50
x 5/16	1.30	x 7/16	2.55	x 1 3/8	10.31	x 7/8	8.75
x 3/8	1.56	x 1/2	2.92	x 1 1/2	11.25	x 1	10.00
x 7/16	1.82	x 9/16	3.28	x 1 3/4	13.13	x 1 1/8	11.25
x 1/2	2.08	x 5/8	3.65	x 2	15.00	x 1 1/4	12.50
x 5/8	2.60	x 3/4	4.38	2 1/2 x 3/16	1.56	x 1 3/8	13.75
x 3/4	3.13	x 7/8	5.10	x 1/4	2.08	x 1 1/2	15.00
x 7/8	3.65	x 1	5.83	x 5/16	2.16	x 1 5/8	16.25
x 1	4.17	x 1 1/8	6.56	x 3/8	3.13	x 1 3/4	17.50
1 3/8 x 1/4	1.14	x 1 1/4	7.29	x 1/2	4.17	x 1 7/8	18.75
x 5/16	1.43	1 7/8 x 1/4	1.56	x 5/8	5.21	x 2	20.00
x 3/8	1.71	x 5/16	1.95	x 3/4	6.25	x 2 1/4	22.50
x 7/16	2.00	x 3/8	2.34	x 7/8	7.29	x 2 1/2	25.00
x 1/2	2.29	x 1/2	3.12	x 1	8.33	3 1/4 x 1/4	2.70
x 5/8	2.86	x 5/8	3.91	x 1 1/8	9.38	x 3/8	4.06
x 3/4	3.40	x 3/4	4.69	x 1 1/4	10.42	x 1/2	5.41
x 7/8	4.01	x 7/8	5.47	x 1 3/8	11.46	x 5/8	6.77
x 1	4.58	x 1	6.25	x 1 1/2	12.50	x 3/4	8.12
1 1/2 x 3/16	.94	2 x 3/16	1.25	x 1 5/8	13.54	x 7/8	9.47
x 1/4	1.25	x 1/4	1.67	x 1 3/4	14.58	x 1	10.83
x 5/16	1.56	x 5/16	2.08	x 2	16.67	x 1 1/2	16.25
x 3/8	1.88	x 3/8	2.50	x 2 1/4	18.75	x 2	21.60

NOTE.—16 feet is the average length of Bar Iron as kept in store.

Bar and Flat Steel.



Weight of Bar Steel per Foot.

Square				Round				Octagon			
Size.	Lbs.	Size.	Lbs.	Size.	Lbs.	Size.	Lbs.	Size.	Lbs.	Size.	Lbs.
1/8	.05	2 5/8	23.50	1/8	.04	2 5/8	18.39	1/8	.04	2 5/8	19.45
3/16	.12	2 3/4	25.70	3/16	.09	2 3/4	20.18	3/16	.10	2 3/4	21.28
1/4	.21	2 7/8	28.20	1/4	.17	2 7/8	22.06	1/4	.18	2 7/8	23.28
5/16	.33	3	30.60	5/16	.26	3	24.10	5/16	.28	3	25.36
3/8	.48	3 1/8	33.13	3/8	.38	3 1/8	26.12	3/8	.40	3 1/8	27.50
7/16	.65	3 1/4	35.90	7/16	.51	3 1/4	28.30	7/16	.54	3 1/4	29.28
1/2	.85	3 3/8	38.64	1/2	.67	3 3/8	30.45	1/2	.70	3 3/8	32.10
9/16	1.08	3 1/2	41.60	9/16	.85	3 1/2	32.70	9/16	.89	3 1/2	34.56
5/8	1.33	3 5/8	44.57	5/8	1.04	3 5/8	35.20	5/8	1.10	3 5/8	37.05
11/16	1.61	3 3/4	47.80	11/16	1.27	3 3/4	37.54	11/16	1.33	3 3/4	39.68
3/4	1.92	4	54.40	3/4	1.50	4	42.72	3/4	1.58	4	45.12
13/16	2.24	4 1/4	61.40	13/16	1.76	4 1/4	48.30	13/16	1.83	4 1/4	50.84
7/8	2.60	4 1/2	68.90	7/8	2.04	4 1/2	54.60	7/8	2.16	4 1/2	56.96
15/16	3.06	4 3/4	76.70	15/16	2.35	4 3/4	60.30	15/16	2.48	4 3/4	63.52
1	3.40	5	85.00	1	2.67	5	66.80	1	2.82	5	70.60
1 1/8	4.30	5 1/4	93.70	1 1/8	3.38	5 1/4	73.60	1 1/8	3.56	5 1/4	77.80
1 1/4	5.31	5 1/2	102.80	1 1/4	4.17	5 1/2	80.80	1 1/4	4.40	5 1/2	85.15
1 3/8	6.43	5 3/4	112.40	1 3/8	5.05	5 3/4	88.30	1 3/8	5.32	5 3/4	93.12
1 1/2	7.65	6	122.40	1 1/2	6.02	6	96.10	1 1/2	6.34	6	101.45
1 5/8	8.98	6 1/2	143.60	1 5/8	7.05	6 1/2	113.20	1 5/8	7.32	6 1/2	117.12
1 3/4	10.40	7	166.40	1 3/4	8.18	7	130.80	1 3/4	8.64	7	138.24
1 7/8	11.90	8	217.60	1 7/8	9.38	8	170.88	1 7/8	9.92	8	180.48
2	13.60	9	275.60	2	10.71	9	218.40	2	11.28	9	227.84
2 1/8	15.40	10	340.00	2 1/8	12.05	10	267.20	2 1/8	12.71	10	282.40
2 1/4	17.20	11	411.20	2 1/4	13.60	11	323.00	2 1/4	14.24	11	340.60
2 3/8	19.20	12	489.60	2 3/8	15.10	12	384.40	2 3/8	15.88	12	405.80
2 1/2	21.20	----	----	2 1/2	16.68	----	----	2 1/2	17.65	----	----

Average Weight of Steel per Lineal Foot.

FLAT SIZES.

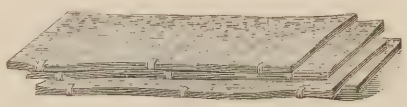
	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/2	4	5	6	7
1/8	.213	.266	.320	.372	.426	.479	.530	.585	.640	.745	.850	.955	1.07	1.18	1.28	1.49	1.70	2.13	2.56	2.98
3/16	.319	.399	.480	.558	.639	.718	.790	.878	.960	1.12	1.28	1.43	1.60	1.76	1.92	2.24	2.55	3.20	3.83	4.47
1/4	.425	.533	.640	.743	.852	.958	1.06	1.17	1.28	1.49	1.70	1.91	2.13	2.34	2.56	2.98	3.40	4.26	5.11	5.96
5/16	.531	.665	.800	.929	1.06	1.20	1.33	1.46	1.60	1.86	2.13	2.39	2.66	2.92	3.19	3.72	4.25	5.32	6.38	7.44
3/8	.638	.798	.960	1.12	1.28	1.43	1.59	1.75	1.91	2.23	2.55	2.87	3.20	3.51	3.83	4.46	5.10	6.40	7.66	8.92
7/16	.744	.931	1.12	1.30	1.49	1.67	1.86	2.05	2.23	2.60	2.98	3.35	3.72	4.09	4.46	5.21	5.95	7.44	8.92	10.40
1/2	---	1.07	1.28	1.49	1.70	1.91	2.13	2.34	2.55	2.98	3.40	3.83	4.26	4.68	5.10	5.96	6.80	8.52	10.20	11.90
9/16	---	1.20	1.44	1.67	1.91	2.15	2.39	2.63	2.87	3.35	3.83	4.30	4.78	5.26	5.74	6.69	7.65	9.56	11.50	13.40
5/8	---	---	1.60	1.86	2.12	2.39	2.66	2.92	3.19	3.72	4.26	4.79	5.32	5.86	6.39	7.44	8.52	10.64	12.78	14.90
11/16	---	---	1.76	2.04	2.34	2.63	2.92	3.22	3.51	4.09	4.68	5.26	5.84	6.43	7.01	8.18	9.35	11.70	14.00	16.40
3/4	---	---	---	2.23	2.55	2.86	3.19	3.50	3.83	4.46	5.10	5.74	6.40	7.02	7.65	8.92	10.20	12.80	15.30	17.90
13/16	---	---	---	2.41	2.76	3.11	3.45	3.80	4.14	4.83	5.53	6.22	6.91	7.60	8.29	9.67	11.10	13.80	16.60	19.30
7/8	---	---	--	---	2.98	3.34	3.72	4.09	4.46	5.21	5.96	6.70	7.46	8.19	8.94	10.42	11.92	14.92	17.88	20.80
15/16	---	---	---	---	3.19	3.59	3.98	4.38	4.78	5.58	6.38	7.17	7.97	8.77	9.56	11.20	12.80	15.90	19.10	22.40
1	---	---	---	---	---	3.82	4.25	4.68	5.10	5.96	6.80	7.66	8.52	9.36	10.20	11.92	13.60	17.04	20.40	23.80
1 1/8	---	---	---	---	--	---	4.78	5.27	5.74	6.71	7.65	8.61	9.59	10.54	11.48	13.41	15.30	19.17	22.95	26.80
1 1/4	---	---	---	---	---	---	--	5.85	6.38	7.45	8.50	9.57	10.65	11.71	12.76	14.90	17.00	21.30	25.61	29.76
1 1/2	---	---	---	---	---	---	---	7.02	7.67	8.94	10.20	11.49	12.78	14.04	15.30	17.88	20.40	25.56	30.60	35.70

Flat Bar and Galvanized Sheet Iron.

Flat Bar Iron.

Weight of One Foot.

Size.	Weight. Pounds.	Size.	Weight. Pounds.	Size.	Weight. Pounds.	Size.	Weight. Pounds.
3½ x 3/16	2.19	4½ x 3/16	2.81	5½ x 3/4	13.70	8 x 3/8	10.00
x 1/4	2.92	x 1/4	3.75	x 7/8	16.00	x 1/2	13.33
x 5/16	3.65	x 5/16	4.69	x 1	18.30	x 5/8	16.67
x 3/8	4.38	x 3/8	5.63	x 1¼	22.90	x 3/4	20.00
x 7/16	5.10	x 1/2	7.50	x 1½	27.50	x 7/8	23.33
x 1/2	5.83	x 5/8	9.38	x 1¾	32.08	x 1	26.67
x 5/8	7.29	x 3/4	11.25	x 2	36.60	x 1¼	33.33
x 3/4	8.75	x 7/8	13.13	x 2¼	41.25	x 1½	40.00
x 7/8	10.21	x 1	15.00	x 2½	45.83	x 1¾	46.67
x 1	11.67	x 1¼	18.75	x 3	55.00	x 2	53.33
x 1⅛	13.13	x 1½	22.50	6 x 3/16	3.75	x 2½	66.66
x 1¼	14.58	x 1¾	26.25	x 1/4	5.00	x 3	80.00
x 1⅜	16.04	x 2	30.00	x 3/8	7.50	9 x 3/16	5.63
x 1½	17.50	x 2¼	33.75	x 1/2	10.00	x 1/4	7.50
x 1⅝	18.96	x 2½	37.50	x 5/8	12.50	x 3/8	11.25
x 1¾	20.42	x 3	45.00	x 3/4	15.00	x 1/2	15.00
x 2	23.33	x 3½	52.50	x 7/8	17.50	x 5/8	18.75
x 2¼	26.25	x 4	60.00	x 1	20.00	x 3/4	22.50
x 2½	29.17	5 x 3/16	3.13	x 1⅛	22.50	x 7/8	26.25
x 3	35.00	x 1/4	4.17	x 1¼	25.00	x 1	30.00
4 x 3/16	2.50	x 3/8	6.25	x 1½	30.00	x 1¼	37.50
x 1/4	3.33	x 1/2	8.33	x 1¾	35.00	x 1½	45.00
x 5/16	4.17	x 5/8	10.42	x 2	40.00	x 2	60.00
x 3/8	5.00	x 3/4	12.50	x 2¼	45.00	x 2½	75.00
x 7/16	5.83	x 7/8	14.58	x 2½	50.00	x 3	90.00
x 1/2	6.67	x 1	16.67	x 3	60.00	10 x 3/16	6.25
x 5/8	8.33	x 1⅛	18.75	7 x 3/16	4.38	x 1/4	8.33
x 3/4	10.00	x 1¼	20.83	x 1/4	5.83	x 3/8	12.50
x 7/8	11.67	x 1⅜	22.95	x 3/8	8.75	x 1/2	16.67
x 1	13.33	x 1½	25.00	x 1/2	11.67	x 5/8	20.83
x 1⅛	15.00	x 1⅝	27.08	x 5/8	14.58	x 3/4	25.00
x 1¼	16.67	x 1¾	29.17	x 3/4	17.50	x 1	33.33
x 1⅜	18.33	x 2	33.33	x 7/8	20.42	x 1½	50.00
x 1½	20.00	x 2¼	37.50	x 1	23.33	x 2	66.67
x 1⅝	21.67	x 2½	41.66	x 1¼	29.17	11 x 1/4	9.17
x 1¾	23.33	x 2¾	45.83	x 1½	35.00	x 3/8	13.75
x 1⅞	25.00	x 3	50.00	x 1¾	40.83	x 1/2	18.33
x 2	26.67	x 3½	58.33	x 2	46.67	x 3/4	27.50
x 2¼	30.00	x 4	66.66	x 2¼	52.50	x 1	36.66
x 2½	33.33	5½ x 3/16	3.44	x 2½	58.33	12 x 1/4	10.00
x 2¾	36.66	x 1/4	4.58	x 2¾	64.16	x 3/8	15.00
x 3	40.00	x 3/8	6.86	x 3	70.00	x 1/2	20.00
x 3¼	43.33	x 1/2	9.16	8 x 3/16	5.00	x 3/4	30.00
x 3½	46.66	x 5/8	11.40	x 1/4	6.67	x 1	40.00

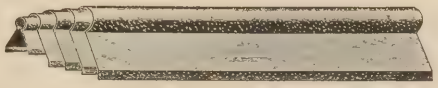


Galvanized Sheet Iron.

Weight of Galvanized Sheet Iron, per Superficial Foot.

U. S. Gauge. No.	Weight per Square Foot. Ounces.	U. S. Gauge. No.	Weight per Square Foot. Ounces.	U. S. Gauge. No.	Weight per Square Foot. Ounces.
10	92½	19	30½	25	16½
11	82½	20	26½	26	14½
12	72½	21	24½	27	13½
14	52½	22	22½	28	12½
16	42½	23	20½	29	11½
18	34½	24	18½	30	10½

Galvanized Ridging and Corrugated Sheets.



GALVANIZED IRON AND BLACK STEEL PAINTED RIDGING

1½ INCH RIDGING.

Diameter of Roll	1½ inch.
Width of Apron	2 "
Girth	8 "
Galvanized, Per foot	.16
Black Steel, Painted, Per foot	.14

2 INCH RIDGING

Diameter of Roll	2 inch.
Width of Apron	2½ "
Girth	10 "
Galvanized, Per foot	.19
Black Steel, Painted, Per foot	.17

2½ INCH RIDGING.

Diameter of Roll	2½ inch.
Width of Apron	3½ "
Girth	12 "
Galvanized, Per foot	.23
Black Steel, Painted, Per foot	.21

3 INCH RIDGING.

Diameter of Roll	3 inch.
Width of Apron	3½ "
Girth	15 "
Galvanized, Per foot	.28
Black Steel, Painted, Per foot	.26



PRESSED CORRUGATED IRON SHEETS.

For Siding, Ceiling, Doors, Shutters, Awnings, etc. Made of Black, Painted and Galvanized Iron. Made from the best quality of Box Annealed Sheets, painted on both sides with Iron Ore Paint, ground in Pure Linseed Oil.

Corrugated Sheets are made by us in three sizes of corrugation, 1¼, 2½ and 3 inches, which are those commonly used, and more readily matched.

Standard stock lengths are seven and eight feet, but for other lengths, such as these will cut to without waste, or any length within the extreme of those named, and not requiring to be rolled specially, there is no extra charge.

In measuring spaces to be covered, allow 12½ per cent. for laps.

Painted Red.

Gauge No	28	27	26	24	22	20
Approximate Weight per 100 square feet in pounds	69	77	84	111	138	165
Price, per lb	9.5	9.1	8.6	8.25	8	7.6

Galvanized.

Gauge No	28	27	26	24	22	20
Approximate Weight per 100 square feet in pounds	86	93	99	127	154	182
Price, per lb	10.4	9.8	9.2	8.6	8.5	7.9

Corrugated, black, not painted, ⅛ cent per pound less than price of painted.

Wire Nails for applying are 6 cents per square, and sufficient Dry Paint for a second coating is 4 cents per square. Wire Nails and Dry Paint will not be shipped unless ordered.

Size of Stock Sheets in 1¼, 2½ and 3 inch Corrugations: 20½ x 84, 20½ x 96, 22 x 84, 22 x 96, 25 x 84, 25 x 96, 26½ x 84, 26½ x 96.

1¼-inch Corrugation, No. 24 W. G.

2½ and 3 inch Corrugation, No. 20 W. G.

Special lengths to 10 feet to order.

The Weston Differential Pulley Block.



Pattern No. 1.
WESTON BLOCK.

They hold the load at any point and cannot run down.

Lifting and lowering effected by pulling opposite sides of the slack chain.

Any length of lift can be supplied.

With Pattern No. 1, one man can raise 1,000 pounds.

Pattern No. 1.

Capacity. Tons.	Price with Regular Chain.	Regular Chain. In the Block. Feet.	Regular Chain. Will Lift. Feet.	Net Weight. Pounds.	Extra Chain. Per Foot of Chain.	Extra Chain. Per Foot of Hoist.	Extra Chain. 1 Regular Length.
¼	18.00	22	6	20	.70	2.80	10.50
½	21.00	26	7	28	.70	2.80	12.50
1	28.00	30	8	51	.75	3.00	17.00
1½	36.00	33	8½	85	.80	3.20	21.50
2	45.00	36	9	125	.85	3.40	27.00
3	60.00	38	10	161	1.00	4.00	36.00

Four feet of extra chain required for every foot of extra lift.

The "Facile" Chain Hoist.

This block is designed for greater efficiency in power and speed above the ordinary differential pulley, and is constructed with an endless hand chain always remaining one length, while the load chain runs over a separate sheave independent of the hand chain.

One man can raise upwards of 2,000 pounds, and the lowering is done by a slight reverse pull on the hand chain, and will run down rapidly with a continuous pull, if desired.

The block is automatically self-sustaining and the load will remain suspended whenever the hand chain is let go.

There is no bottom block and the load hook can be run up close to the top frame; a very convenient arrangement where the head-room is small.

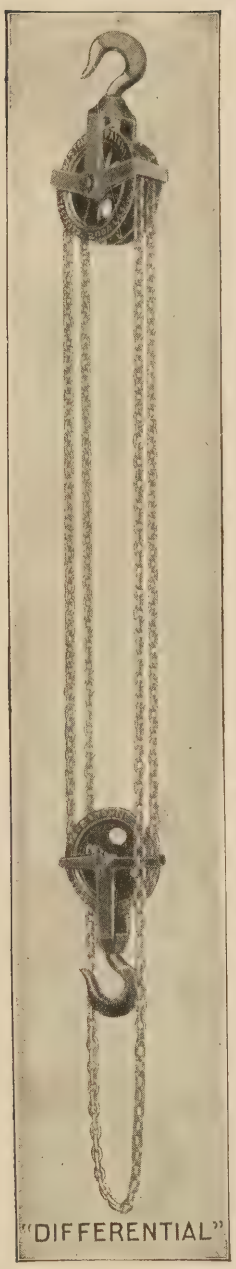
The hand chain runs through a swiveling, radiating chain guide, enabling the workman to stand nearly on a horizontal line with the block when necessary, while the load chain always hangs perpendicular.



FACILE CHAIN HOIST.

Capacity, tons	¼	½	1	1½	2
Regular Chain in Block will Lift, feet	8	8	8	9	10
Weight Each Block Complete, pounds	31	49	80	103	151
Price, with Regular Lift	22.00	26.00	33.00	46.00	60.00

Weston "Differential" Block.



Capacity in Tons.	Price Complete.	Hoist in Feet.	Extra Hoist. Price per Foot.*	Net Weight in Pounds.
1/8	18.00	5	2.80	11
1/4	18.00	6	2.80	22
1/2	21.00	7	2.80	30
1	28.00	8	3.00	51
1 1/2	36.00	8 1/2	3.20	81
2	45.00	9	3.40	122
3	60.00	9 1/2	4.00	180

* Each additional foot of hoist requires 4 feet of additional chain.

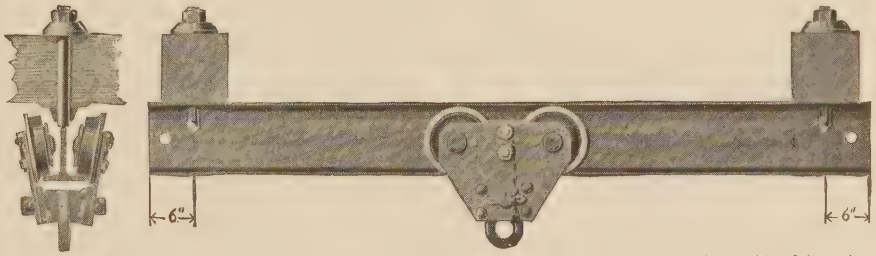
PRICES OF PARTS.†

Capacity. in Tons.	Sheaves Top.	Sheaves Bottom.	Yokes and Hooks Top.	Yokes and Hooks Bottom.	Regular Chains Complete. Each.
1/4	3.60	.90	3.00	2.25	10.50
1/2	4.80	1.30	3.75	3.00	12.50
1	6.00	1.50	4.50	3.75	17.00
1 1/2	8.40	1.90	5.50	4.50	21.50
2	12.00	2.25	7.50	5.50	27.00
3	15 60	3.75	11.00	8.00	36.00

† Prices of Pins are as follows:

Tons	1/4	1/2	1	1 1/2	2	3
Top	.40	.50	.50	.60	.60	.70
Bottom	.30	.40	.40	.50	.50	.60

Overhead Track Complete.



Including Trolley and 12-foot Rolled Joist with two Hanger Bolts for attaching to timbers 12 inches or less.

Overhead Track.

Capacity. in Tons.	With Cast Iron Trolley. Plain.	With Cast Iron Trolley. With Roller Bearings.	With Steel Plate Trolley. Plain.	With Steel Plate Trolley. Geared.
1/2	28.00	----	41.00	60.00
1	33.00	38.00	48.00	68.00
1 1/2	40.00	45.00	55.00	75.00
2	46.00	52.00	62.00	82.00
3	----	62.00	82.00	100.00
4	----	----	105.00	125.00
5	----	----	130.00	150.00
6	----	----	155.00	175.00
8	----	----	200.00	230.00
10	----	----	245.00	275.00

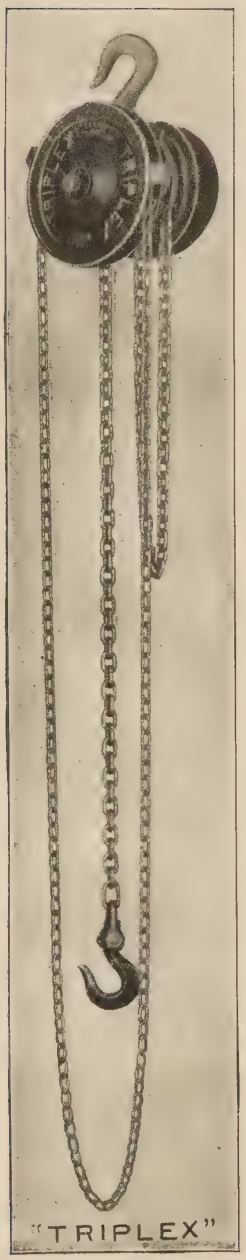
Steel Trolleys.

Four Wheeled, for Standard Light Steel I Beams.

Capacity in Tons.	Standard Size of I Beam in Inches.*	Plain.	Geared.
1/4	4	25.00	----
1/2	5	30.00	----
1	6	35.00	55.00
1 1/2	7	40.00	60.00
2	8	45.00	65.00
3	9	60.00	80.00
4	10	80.00	100.00
5	12	100.00	120.00
6	15	120.00	140.00
8	20	150.00	180.00
10	24	180.00	210.00

* Can be altered to suit larger beams.

Chain Hoists.



"Triplex" Block, Spur Geared.

Capacity in Tons.	Price Complete.	Regular Hoist in Feet.	Extra Hoist. Price per Foot.	Net Weight in Pounds.
½	35.00	8	.90	51
1	45.00	8	.95	89
1½	60.00	8	1.00	133
2	70.00	9	1.05	203
3	90.00	10	1.50	206
4	110.00	10	1.60	307
5	140.00	12	2.15	397
6	165.00	12	2.15	417
8	200.00	12	2.70	505
10	240.00	12	3.25	622
12	300.00	12	4.30	800
16	360.00	12	5.40	1000
20	425.00	12	6.50	1150

"Duplex" Block, Screw Geared.

Capacity in Tons.	Price Complete.	Regular Hoist in Feet.	Extra Hoist. Price per Foot.	Net Weight in Pounds.
½	25.00	8	1.25	43
1	30.00	8	1.30	57
1½	40.00	8	1.35	76
2	50.00	9	1.40	104
3	70.00	10	1.50	200
3½	80.00	10	1.90	210
4	95.00	10	1.95	225
5	125.00	12	2.00	340
6	150.00	12	2.80	360
7	175.00	12	3.00	370
8	200.00	12	3.10	390
10	250.00	12	3.20	570

For all around use these are compact, powerful and convenient. Durability and safety are combined with lightness, making these blocks the easiest of all to handle. For speed they are excelled only by the "Triplex" blocks, and will lift at least twenty-five per cent. faster and easier than any previous design of the popular and extensively used class of worm wheel or screw blocks.

The gearing is enclosed in an oil-tight housing, and the working parts are thus always immersed in oil, insuring smooth action and thorough lubrication.



Tackle Blocks with Loose Hooks, Inside Iron Strapped.

Common or Iron Bushed.



Sheave. Inches.	For Rope. Inches.	Shell. Inches.	Single. Each.	Double. Each.	Triple. Each.	Extra Net List for Galvanizing Straps. Single. Each.	Double. Each.	Triple. Each.
1¾ x ½	5/16	3	.70	1.30	1.75	.04	.06	.10
2 x 5/8	3/8	3½	.75	1.45	2.00	.04	.06	.10
2¼ x 5/8	½	4	.85	1.60	2.15	.05	.07	.11
3 x 13/16	5/8	5	.90	1.75	2.25	.06	.08	.12
3½ x 1	¾	6	1.10	2.00	2.90	.10	.12	.15
4¼ x 1	7/8	7	1.30	2.40	3.50	.12	.15	.18
4¾ x 1⅛	1	8	1.65	2.85	4.25	.16	.21	.30
5½ x 1⅛	1	9	1.85	3.40	4.75	.22	.28	.38
6½ x 1¼	1⅛	10	2.75	4.50	6.25	.28	.38	.50
7 x 1¼	1⅛	11	4.45	7.50	10.65	.35	.45	.60
8 x 1⅜	1¼	12	4.45	7.50	10.65	.35	.45	.60
9 x 1⅜	1¼	13	7.00	10.50	15.00	.55	.75	1.00
9½ x 1½	1⅜	14	7.00	10.50	15.00	.55	.75	1.00
10 x 1⅝	1½	15	8.00	13.00	18.00	.75	.95	1.25
10½ x 1¾	1⅝	16	10.00	15.00	22.00	.85	1.20	1.50

Patent or Roller Bushed.

Sheave. Inches.	For Rope. Inches.	Shell. Inches.	Single. Each.	Double. Each.	Triple. Each.	Extra Net List for Galvanizing Straps. Single. Each.	Double. Each.	Triple. Each.
1¾ x ½	5/16	3	1.10	2.00	2.90	.04	.06	.10
2 x 5/8	3/8	3½	1.15	2.20	3.15	.04	.06	.10
2¼ x 5/8	½	4	1.20	2.25	3.25	.05	.07	.11
3 x 13/16	5/8	5	1.25	2.35	3.50	.06	.08	.12
3½ x 1	¾	6	1.50	2.85	4.40	.10	.12	.15
4¼ x 1	7/8	7	1.70	3.35	5.00	.12	.15	.18
4¾ x 1⅛	1	8	2.25	4.15	6.00	.16	.21	.30
5½ x 1⅛	1	9	2.50	4.70	7.25	.22	.28	.38
6½ x 1¼	1⅛	10	3.50	6.00	8.50	.28	.38	.50
7 x 1¼	1⅛	11	5.30	9.20	13.20	.35	.45	.60
8 x 1⅜	1¼	12	5.30	9.20	13.20	.35	.45	.60
9 x 1⅜	1¼	13	8.15	12.80	18.45	.55	.75	1.00
9½ x 1½	1⅜	14	8.15	12.80	18.45	.55	.75	1.00
10 x 1⅝	1½	15	9.25	15.50	21.75	.75	.95	1.25
10½ x 1¾	1⅝	16	11.50	18.00	26.50	.85	1.20	1.50

Patent Steel and Iron with Loose Side Hooks.

Plain Bushed.



Sheave. Inches.	For Rope. Inches.	Shell. Inches.	Single. Each.	No.	Double. Each.	No.	Triple. Each.	No.
2¼ x 11/16	½	4	.90	1	1.75	3	2.50	5
2¾ x 7/8	5/8	5	1.00	7	1.90	9	2.75	11
3½ x 1	¾	6	1.25	13	2.25	15	3.25	17
4¼ x 1⅛	7/8	7	1.50	19	2.70	21	4.00	23
5 x 1¼	1	8	1.85	25	3.20	27	4.75	29
5½ x 1 5/16	1 1/16	9	2.40	31	4.00	33	5.50	35
6¼ x 1⅜	1⅛	10	3.10	37	5.10	39	7.00	41
7½ x 1½	1¼	12	5.00	43	8.25	45	11.75	47
8½ x 1⅝	1⅜	14	7.50	49	11.75	51	16.50	53

Patent or Roller Bushed.

Sheave. Inches.	For Rope. Inches.	Shell. Inches.	Single. Each.	No.	Double. Each.	No.	Triple. Each.	No.
2¾ x 7/8	5/8	5	1.50	8	2.90	10	4.25	12
3½ x 1	¾	6	1.75	14	3.25	16	4.75	18
4¼ x 1⅛	7/8	7	2.10	20	3.85	22	5.80	24
5 x 1¼	1	8	2.55	26	4.60	28	6.85	30
5½ x 1 5/16	1 1/16	9	3.20	32	5.60	34	7.90	36
6¼ x 1⅜	1⅛	10	4.05	38	7.00	40	9.85	42
7½ x 1½	1¼	12	6.00	44	10.35	46	14.90	48
8½ x 1⅝	1⅜	14	8.75	50	14.25	52	20.25	54

Wire and Manila Rope.

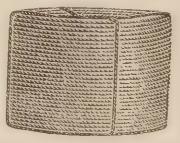


STANDARD HOISTING ROPE.

Composed of 6 Strands and a Hemp Center, 19 Wires to the Strand.

Trade No.	Price in Cts. per Foot.	Diameter in Inches.	Ap. Circumference in Inches.	Weight per Foot in Lbs.	Ap. Breaking Strain in Tons of 2,000 Lbs.	Allowable Work Strain in Tons of 2,000 Lbs.	Min. Size of Drum or Sheave in Ft.
	Swedish Iron.						
--	1.70	2 3/4	8 5/8	11.95	114	22.8	16
--	1.40	2 1/2	7 7/8	9.85	95	18.9	15
1	1.17	2 1/4	7 1/8	8.00	78	15.66	13
2	.92	2	6 1/4	6.30	62	12.40	12
3	.80	1 3/4	5 1/2	4.85	48	9.60	10
4	.63	1 5/8	5	4.15	42	8.40	8 1/2
5	.57	1 1/2	4 3/4	3.55	36	7.20	7 1/2
5 1/2	.48	1 3/8	4 1/4	3.00	31	6.20	7
6	.40	1 1/4	4	2.45	25	5.00	6 1/2
7	.33	1 1/8	3 1/2	2.00	21	4.20	6
8	.26	1	3	1.58	17	3.40	5 1/4
9	.20	7/8	2 3/4	1.20	13	2.60	4 1/2
10	.16	3/4	2 1/4	0.89	9.7	1.94	4
10 1/4	.12	5/8	2	0.62	6.8	1.36	3 1/2
10 1/2	.10	9/16	1 3/4	0.50	5.5	1.10	2 3/4
10 3/4	.08	1/2	1 1/2	0.39	4.4	0.88	2 1/4
10a	.07 1/2	7/16	1 1/4	0.30	3.4	0.68	2
10b	.07	3/8	1 1/8	0.22	2.5	0.50	1 1/2
10c	.06 3/4	5/16	1	0.15	1.7	0.34	1
10d	.06 1/2	1/4	3/4	0.10	1.2	0.24	3/4
	Cast Steel.						
--	2.10	2 3/4	8 5/8	11.95	228	45.6	10
--	1.75	2 1/2	7 7/8	9.85	190	37.9	9 1/2
1	1.42	2 1/4	7 1/8	8.00	156	31.2	8 1/2
2	1.11	2	6 1/4	6.30	124	24.8	8
3	.93	1 3/4	5 1/2	4.85	96	19.2	7 1/4
4	.74	1 5/8	5	4.15	84	16.8	6 1/4
5	.66	1 1/2	4 3/4	3.55	72	14.4	5 3/4
5 1/2	.56	1 3/8	4 1/4	3.00	62	12.4	5 1/2
6	.46	1 1/4	4	2.45	50	10.0	5
7	.38	1 1/8	3 1/2	2.00	42	8.40	4 1/2
8	.30	1	3	1.58	34	6.80	4
9	.23	7/8	2 3/4	1.20	26	5.20	3 1/2
10	.18	3/4	2 1/4	0.89	19.4	3.88	3
10 1/4	.14	5/8	2	0.62	13.6	2.72	2 1/4
10 1/2	.12	9/16	1 3/4	0.50	11.0	2.20	1 3/4
10 3/4	.11	1/2	1 1/2	0.39	8.8	1.76	1 1/2
10a	.10	7/16	1 1/4	0.30	6.8	1.36	1 1/4
10b	.09 1/2	3/8	1 1/8	0.22	5.0	1.00	1
10c	.09 1/4	5/16	1	0.15	3.4	0.68	3/4
10d	.09	1/4	3/4	0.10	2.4	0.48	1/2

NOTE.—When the iron or steel rope named above is galvanized or tinned, add 10 per cent. to list price per foot. When made with wire center, add 10 per cent. to list price per foot.



MANILA CORDAGE.

Table of Approximate Weights.

Regular Full Coils 7/16 inch in diameter and above 1,200 feet in length.

Small Coils 7/16 inch in diameter and above 720 feet in length.

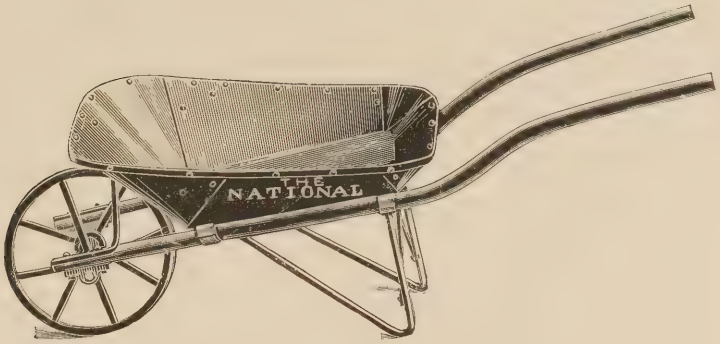
Size in Circumference. Inch.	Size in Diameter. Inch.	Weight per Coil.	Weight per Small Coil.
1/2	3/16	35	18
3/4	1/4	45	22
1	5/16	55	27
1 1/8	3/8	60	30
1 1/4	7/16	85	50
1 1/2	1/2	100	62
1 3/4	9/16	125	85
2	5/8	170	100
2 1/4	3/4	205	125
2 1/2	13/16	240	145
2 3/4	7/8	288	170
3	1	330	200
3 1/4	1 1/16	390	235
3 1/2	1 1/8	430	260
3 3/4	1 1/4	490	295
4	1 5/16	550	330
4 1/4	1 3/8	610	365
4 1/2	1 7/16	641	375
4 3/4	1 1/2	765	460
5	1 5/8	865	520
5 1/4	1 11/16	990	595

Unless otherwise stated all quotations made are basis prices and subject to the following variations:

Manila and Sisal Rope.

Rope 1 1/4 in. cir. 7/16 in. diam. (15 thread)---------Basis
" 1 1/8 " 3/8 " (12 ") 1/2c. additional
" 1 " 5/16 " (9 ") 1c. "
" 3/4 " 1/4 " (6 ") 1c. "
" 9/16 " 3/16 " (Fine 6 ") 1 1/2c. "
Bolt and Fine Rope ---------1 1/2c. "
Rope 4 strand, 2 in. cir. and smaller--1c. "
Drilling Cables, Sand Lines, Tubing and Sucker Rod Lines------ ----1c. "
Bull Ropes----------Basis
Lariat or Cow Boy Rope, 3 strand----1c. additional
" " " 4 " ----1 1/2c. "
Reliable Brand Transmission Rope-- } Inquire for
Plumbago Laid Hoisting Rope------ } Prices.
Hay, Hide and Bale Rope, Coarse and Medium--Basis
" " " Fine--------1/2c. additional
Laid--1/2c. Unoiled--1/2c. Balling---1/4c. "
Lathyarn, Coarse (110 yarns)------1/2c. below Basis
" Medium (130 ")------1/2c. " "
" Fine (200 ")---------- Basis
Fodder Yarn, 24 oz----- ----------1/2c. below "
" " 21 " ----------1/2c. " "
" " 18 " ---------- Basis
" " 16 " ----------1/2c. above "

The Nason Tubular Steel Barrows.

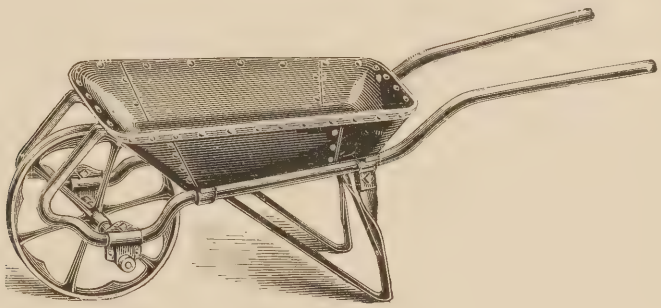


NATIONAL IDEAL STEEL BARROW.

In our "National Ideal" Steel Barrow the tray is of the most approved shape, is made of the best grade of steel, and has a strong band iron riveted around to stiffen it. Special attention has been paid to bracing this barrow, with a view to increased strength. The wheel is made of malleable iron, which is light and neat in form, but with an exact distribution of metal that secures strength and durability. The tubular iron handles are secured to tray by the use of our patent malleable iron clips.

No. 4. Greatest width of tray, 29 inches; greatest length, 32 inches; capacity, 3 cubic feet. 15-inch wheel. Tray of No. 16 steel.

Each 10.00



MINING BARROW.

Our Patented Mining Barrows are made to dump forward and at the dumping point readily discharge their load, thereby avoiding the strain incident to side dumping barrows.

The frame of these Barrows is so constructed that at the dumping point it prevents running back on the operator.

No. 4. Greatest width of tray, 29 inches; greatest length of tray, 32 inches; capacity, 3 cubic feet of earth. 16-inch wheel. Tray of No. 16 steel.

Each 11.50

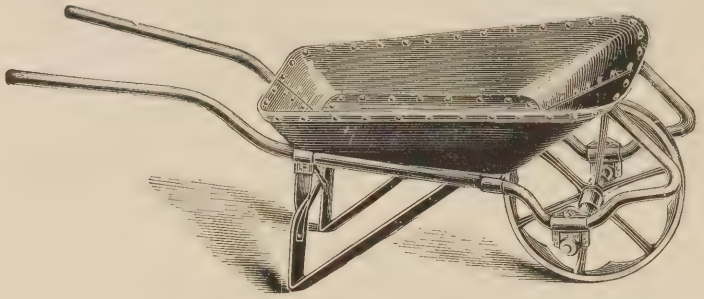
No. 4½. Size and capacity same as the No. 4. Tray of No. 14 steel.

Each 12.25

No. 5. Greatest width of tray, 31½ inches; greatest length of tray, 36 inches; capacity, 4 cubic feet of earth. 16-inch wheel. Tray of No. 14 steel.

Each 14.25

The Nason Tubular Steel Barrows.



FOUNDRY BARROW.
Having Thicker Bottom than Sides.

As will be noticed, we manufacture the trays of our Patented Foundry Barrows in two grades of thickness; each style has our heavier bottom than sides.

Grade "A."

No. 4 A. Greatest width of tray, 29 in.; Greatest length of tray, 32 in.; 16-in. wheel. Tray of Nos. 12 and 10 steel. Capacity, 3 cubic feet.
Each 14.00

No. 5 A. Greatest width of tray, 31½ in.; Greatest length of tray, 36 in.; 16-in. wheel. Tray of Nos. 12 and 10 steel. Capacity, 4 cubic feet.
Each 15.00

No. 6 A. Greatest width of tray, 32 in.; Greatest length of tray, 38 in.; 16-in. wheel. Tray of Nos. 12 and 10 steel. Capacity, 4½ cubic feet.
Each 16.50

No. 7 A. Greatest width of tray, 36 in.; Greatest length of tray, 39 in ; 16-in. wheel. Tray of Nos. 12 and 10 steel. Capacity, 5½ cubic feet.
Each 20.00

No. 8 A. Greatest width of tray, 40 in.; Greatest length of tray, 45 in.; 16-in. wheel. Tray of Nos. 12 and 10 steel. Capacity, 7½ cubic feet.
Each 22.00

Grade "AA."

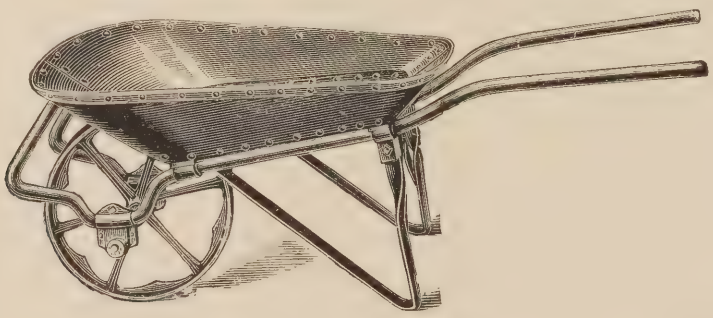
No. 4 AA. Greatest width of tray, 29 in.; Greatest length of tray, 32 in.; 16-in. wheel. Tray of Nos. 12 and 8 steel. Capacity, 3 cubic feet.
Each 15.00

No. 5 AA. Greatest width of tray, 31½ in.; Greatest length of tray, 36 in.; 16-in. wheel. Tray of Nos. 12 and 8 steel. Capacity, 4 cubic feet.
Each 16.00

No. 6 AA. Greatest width of tray, 32 in.; Greatest length of tray, 38 in.; 16-in. wheel. Tray of Nos. 12 and 8 steel. Capacity, 4½ cubic feet.
Each 17.50

No. 7 AA. Greatest width of tray, 36 in.; Greatest length of tray, 39 in.; 16-in. wheel. Tray of Nos. 12 and 8 steel. Capacity, 5½ cubic feet.
Each 21.00

No. 8 AA. Greatest width of tray, 40 in.; Greatest length of tray, 45 in.; 16-in. wheel. Tray of Nos. 12 and 8 steel. Capacity, 7½ cubic feet.
Each 23.00



COAL BARROW.

Our Patented Coal Barrows are provided with our patented thicker bottoms than sides, and have all the advantages of forward dumping which are found in our Patented Mining and Foundry Barrows.

They are carefully constructed and are especially adapted for wheeling coal and ashes.

No. 4. Greatest width of tray, 29 in.; Greatest length of tray, 32 in.; Capacity, 150 lbs. of coal. 16-in. wheel. Tray of Nos. 16 and 12 steel.
Each 12.25

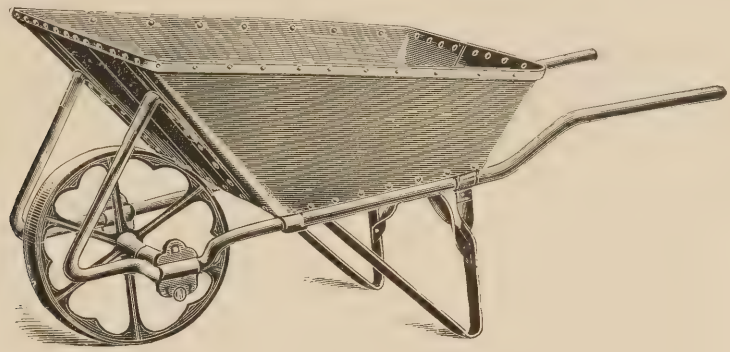
No. 5. Greatest width of tray, 31½ in.; Greatest length of tray, 36 in.; Capacity, 200 lbs. of coal. 16-in. wheel. Tray of Nos. 16 and 12 steel.
Each 14.25

No. 6. Greatest width of tray, 32 in.; Greatest length of tray, 38 in.; Capacity, 225 lbs. of coal. 16-in. wheel. Tray of Nos. 16 and 12 steel.
Each 15.00

No. 7. Greatest width of tray, 36 in.; Greatest length of tray, 39 in.; Capacity, 300 lbs. of coal. 16-in. wheel. Tray of Nos. 16 and 12 steel.
Each 18.00

No. 8. Greatest width of tray, 40 in.; Greatest length of tray, 45 in.; Capacity, 450 lbs. of coal. 16-in. wheel. Tray of Nos. 16 and 12 steel.
Each 20.00

The Nason Tubular Steel Barrows.



COAL BARROW, SQUARE TRAY.

No. 9. Greatest width of tray, 32 in.; Greatest length of tray, 34 in.; Capacity, 260 lbs., or 3½ bushels of coal. 18-in. wheel. Tray of Nos. 14 and 10 steel.
Each 22.00

No. 10. Greatest width of tray, 33 in.; Greatest length of tray, 36 in.; Capacity, 340 lbs., or 4½ bushels of coal. 18-in. wheel. Tray of Nos. 14 and 10 steel.
Each 24.00

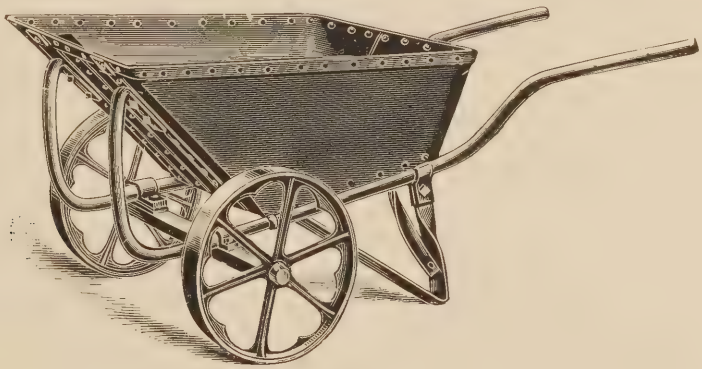
No. 11. Greatest width of tray, 35 in ; Greatest length of tray, 38 in.; Capacity, 400 lbs., or 5½ bushels of coal. 18-in. wheel. Tray of Nos. 14 and 10 steel.
Each 26.00

No. 12. Greatest width of tray, 36 in.; Greatest length of tray, 40 in.; Capacity, 480 lbs., or 6½ bushels of coal. 18-in. wheel. Tray of Nos. 14 and 10 steel.
Each 28.00

No. 13. Greatest width of tray, 38 in.; Greatest length of tray, 42 in.; Capacity, 600 lbs., or over 8 bushels of coal. 18-in. wheel. Tray of Nos. 14 and 10 steel.
Each 30.00

NOTE.—Our patented Coal Barrows with Square Trays are also made in the A (of Nos. 12 and 10 steel) and AA (of Nos. 12 and 8 steel) styles, of same size and capacity as the preceding, at the following prices:

No. 9A.	Capacity,	260	pounds	23.50
" 10A.	"	340	"	25.50
" 11A.	"	400	"	27.50
" 12A.	"	480	"	29.75
" 13A.	"	600	"	32.00
" 9AA.	"	260	"	24.50
" 10AA.	"	340	"	26.75
" 11AA.	"	400	"	28.50
" 12AA.	"	480	"	30.75
" 13AA.	"	600	"	33.50



COAL BARROW, SQUARE TRAY, TWO WHEELS.

Our Mining, Foundry and Coal Barrows, numbered 4 to 13, inclusive, can be furnished with two wheels.

The following lists contain the sizes more commonly made in this way.

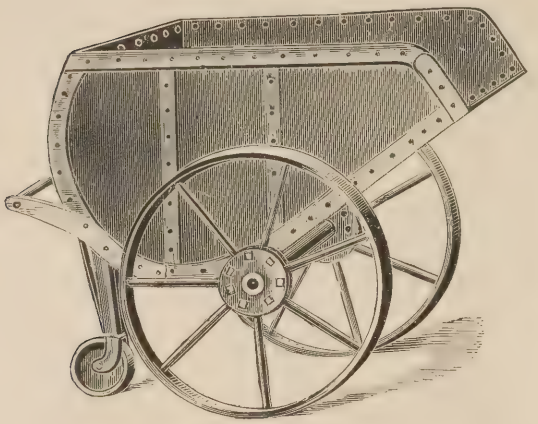
The Barrows given below correspond in size and capacity to the original numbers used above.

No. 9½.	Capacity,	260	pounds	28.00
" 10½.	"	340	"	30.00
" 11½.	"	400	"	32.00
" 12½.	"	480	"	34.00
" 13½.	"	600	"	38.00

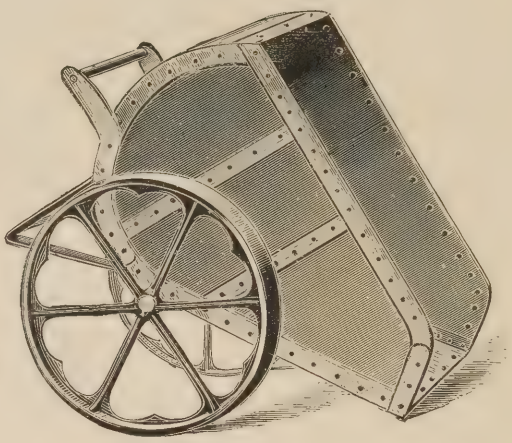
NOTE.—Our patented Two-Wheeled Coal Barrows are also made in the A (of Nos. 12 and 10 steel) and AA (of Nos. 12 and 8 steel) styles, of the same sizes and capacity as the preceding, as follows:

No. 9½A.	Capacity,	260	pounds	29.50
" 10½A.	"	340	"	31.50
" 11½A.	"	400	"	33.50
" 12½A.	"	480	"	35.75
" 13½A.	"	600	"	40.00
" 9½AA.	"	260	"	30.50
" 10½AA.	"	340	"	32.75
" 11½AA.	"	400	"	34.50
" 12½AA.	"	480	"	36.75
" 13½AA.	"	600	"	42.00

The Nason Charging Barrows and Coal Tubs.



No. 22.



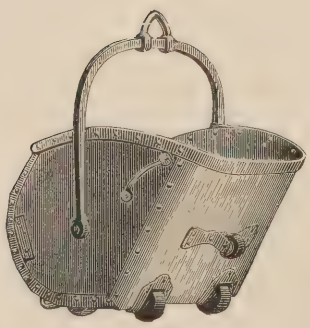
No. 23.

Charging Barrows for Charging Blast Furnaces and Gas Retorts.

Number.	Dimensions of Body. Width. Inches.	Depth. Inches.	Length. Inches.	Diameter of Wheels.	Capacity. Cubic Feet.	Each.
18	20	21½	54	28 in., Malleable.	10	58.00
19	21	25	54	28 " "	12	62.00
20	24	26	54	28 " "	14	65.00
21	26	28	56	32 " Wrought.	16	68.00
22	28	30	57	32 " "	20	72.00

Any of the above sizes can be furnished with swivel at a small additional cost. See figure 22.
Charging Barrows of other sizes can be made to order.

Coal Tubs—Side Catch.



No. 32.
COAL TUB.
Side Catch.

Horse Power.

No.	Coal Capacity. Pounds.	Cubic Feet Capacity.	Weight of Tub. Pounds.	Gauge of Steel.	Height from Floor to Top of Side. Inches.	Length over all. Inches.	Width over all. Inches.	Each.
24	250	5	155	10	22	29	29	30.00
25	335	7	165	10	23	31½	32	32.50
26	400	8	190	10	24	33½	33	35.00
27	500	10	225	10	27	36	35½	40.00

Steam Power.

No.	Coal Capacity. Pounds.	Cubic Feet Capacity.	Weight of Tub. Pounds.	Gauge of Steel.	Height from Floor to Top of Side. Inches.	Length over all. Inches.	Width over all. Inches.	Each.
28	400	8	250	8	25	34	34½	40.00
29	500	10	280	8	27½	36	36	44.00
30	560	11	300	8	28	37	38	45.00
31	600	12	320	8	28	37½	39	60.00
32	600	12	340	8	29	38	39	65.00
33	700	15	410	8	31	40½	42	75.00
34	800	16	435	8	31	42½	43	80.00
35	900	18	445	8	32	43	44	85.00
36	1000	20	455	8	32	44	45	88.00
37	1120	22	475	8	32	45	46	90.00
38	1200	24	500	8	34	51	49	100.00
39	1500	30	645	8	37½	53	51	130.00
40	2000	40	825	6	40½	56	57	140.00
41	2240	45	850	6	40½	56	59	150.00

Barrow Repairs and Bristol Trucks.

Square Tray.

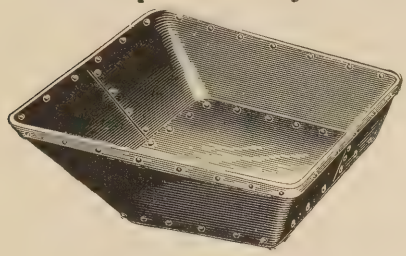


Fig. 17.

For Barrow No.		Net, Each.	A.	AA.
9	Square	9.00	10.50	11.75
10	"	9.75	11.00	12.50
11	"	10.50	11.75	13.00
12	"	11.00	12.50	13.75
13	"	13.00	14.50	15.50

Barrow Wheels.

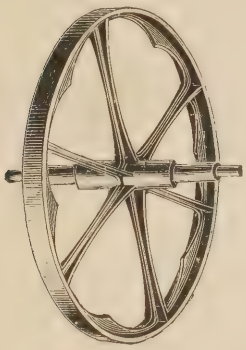


Fig. 20.
MALLEABLE.

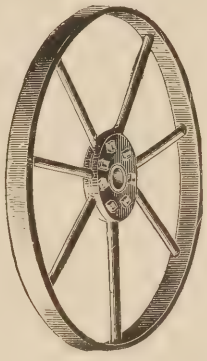
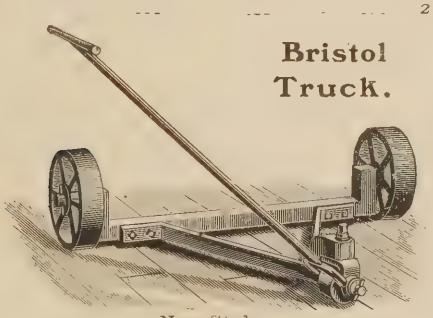


Fig. 21.
WROUGHT.

We are prepared to furnish Wheels of malleable or wrought iron with steel axles, such as are used on our Barrows, in any quantity. They are made light and neat in form, but with an exact distribution of metal that secures strength and durability. The following list applies to Malleable Wheels :

Diameter, inches.	Width of Tire, in.	Diameter of Axle, in.	Each.
15 } With 16 } Axles. 18 }	1½	1⅛	2.25
	2	1⅛	3.25
	2	1⅛	4.00
20	2	---	5.25
24	2¼	---	6.50
28	2½	---	9.00
32	---	---	17.00
34	---	---	18.00
48	---	---	21.00

Bristol Truck.



New Style.

Dirt and Mining Barrow Trays.

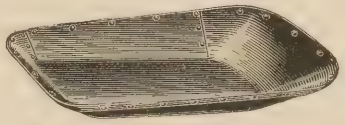


Fig. 19.

For Barrow No.	Width, in.	Length, in.	Capacity, cu. ft. earth.	Gauge of Steel.	Each.
4	29	32	3	16	4.25
4½	29	32	3	14	4.50
5	31½	36	4	14	5.25

Coal and Foundry Barrow Trays.

Thicker Bottoms than Sides.

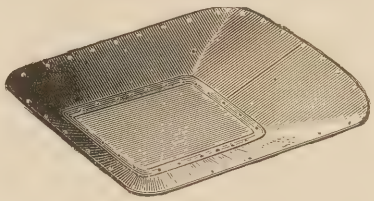


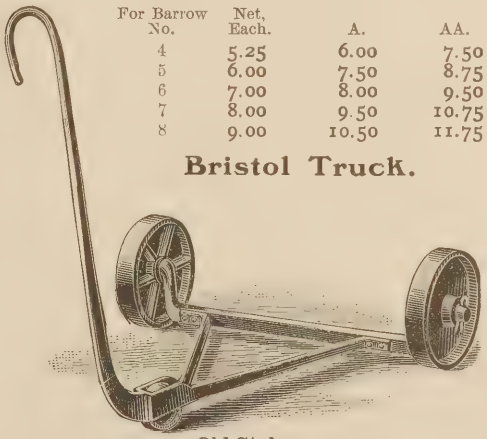
Fig. 18.

NOTE.—The above illustration shows the bottom riveted to the sides. This bottom is of heavier steel than the sides, thereby at once equalizing the wear, and by being riveted in the manner shown, serving to render the entire Tray stiff and strongest where strength is most required.

Our Trays (plain numbers 4 to 13, inclusive), corresponding in size and capacity to the barrows of like numbers, have sides of No. 16 and bottoms of No. 12 steel.

Trays for A barrows have sides of No. 12 and bottoms of No. 10 steel.

Trays for AA barrows have sides of No. 12 and bottoms of No. 8 steel.



For Barrow No.	Net, Each.	A.	AA.
4	5.25	6.00	7.50
5	6.00	7.50	8.75
6	7.00	8.00	9.50
7	8.00	9.50	10.75
8	9.00	10.50	11.75

Bristol Truck.

Old Style.

Bristol Trucks.

Old and New Style.

No.	Capacity, lbs.	Distance Between Drops.	Each.
1	750	22	10.00
2	1000	26	20.00
3	1500	30	25.00
4	2000	34	30.00



Fig. 44.
NEW YORK PATTERN.

Patented Steel Trucks.

Our Patented Steel Trucks are lighter and easier to handle and far more durable than wooden trucks of like capacity. As shown in the illustrations, the frame is made of steel angles, with cross bars, either straight or curved, as desired. Our patent papier mache handles overcome the objectionable effects of heat and cold, and permit the use of the Trucks throughout the year..

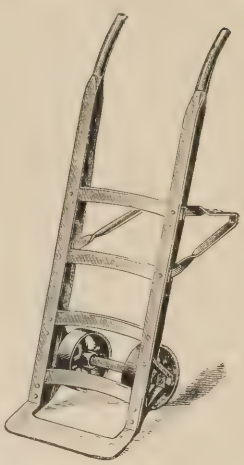


Fig. 45.
WESTERN PATTERN.

Figs. 44 and 45.

No.	Length of Handles.	Width at end of Handles.	Width at Nose.	Size of Wheels.	Weight.	New York Pattern.	Western Pattern.
1	56 inches	23 inches	17 inches	12 inches	130 lbs.	20.00	22.00
2	56 "	21 "	14 "	10 "	90 "	15.00	17.00

These Trucks can be made in all sizes and in any pattern that may be required for any special purpose.

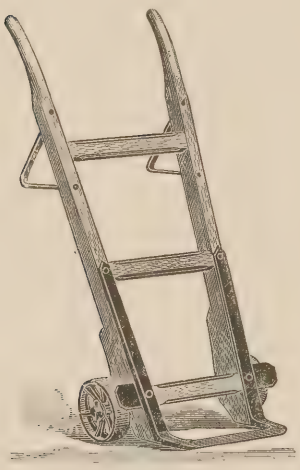


Fig. 52.
STORE AND WAREHOUSE TRUCK.
New York Pattern.

Fig. 52. Steel Nose and Axle.

No.	Length of Handle.	Width at Nose.	Width at Upper Bar.	Diam. of Wheel.	Weight.	Half Strapped.	Full Strapped.
1	4 ft. 0 in.	13 in.	16 in.	6 in.	36 lbs.	4.85	6.50
2	4 " 5 "	14 3/4 "	19 1/2 "	6 7/8 "	54 "	6.00	8.00
3	4 " 7 "	15 3/4 "	21 1/4 "	7 3/4 "	66 "	7.00	9.00
4	4 " 11 "	16 "	21 1/4 "	8 3/4 "	80 "	8.00	10.00
5	5 " 4 "	17 1/2 "	22 3/4 "	10 3/4 "	100 "	9.50	11.50
6	5 " 8 "	18 1/4 "	24 1/4 "	10 3/4 "	120 "	11.50	13.50

Weights given are for half strapped.

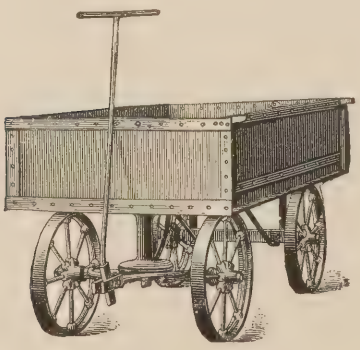
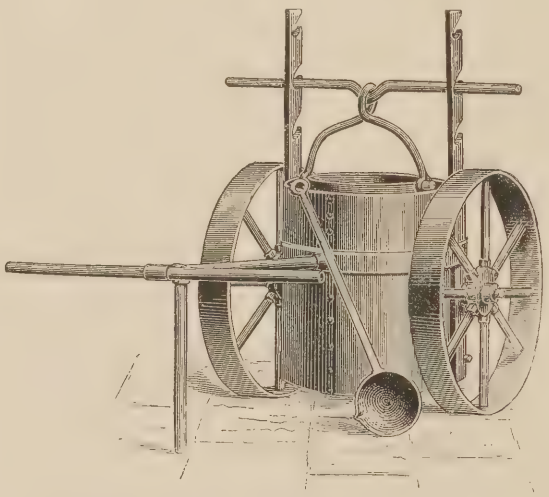


Fig. 28.
COAL OR COKE WAGON.



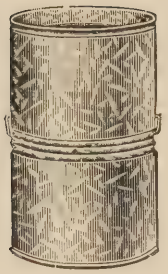
Lead Melting Furnace.

Lead Furnace on Wheels. Furnished with Lead Pot, Bar and 1 Ladle. Capacity of Pot, 450 lbs. Each 35.00

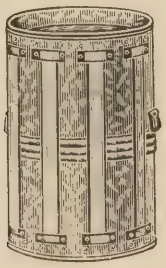
Coal or Coke Wagons.

No.	Capacity.	Length.	Width.	Depth.	Wheels.	Each.
20	550	58	30	10	16	50.00
21	715	64	32	11	16	60.00
22	1032	68	34	14	16	75.00
23	1210	68	36	14	16	80.00
24	1570	75	42	15 1/2	16	90.00
25	2025	92	41	16	16	110.00

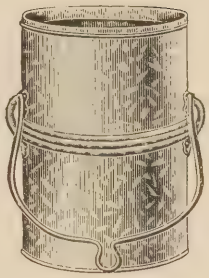
Ash Cans.



MONITOR ASH CAN.
Galvanized, without Cover.
Drop Side Handles.



MONITOR ASH CAN.
Galvanized, without Cover.
Wood Staves, Drop Side Handles.



MONITOR ASH CAN.
Galvanized, without Cover.
Extra Heavy, Bailed for Hoisting.

Monitor Ash Cans, Galvanized, Drop Side Handles.

No	2	2½	3	4	5	6
Size, inches	14 x 15½	14 x 18	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	2	2	3	4	5	6
Without Covers, per dozen	26.00	30.00	34.00	40.00	46.00	52.00

Monitor Ash Cans, Galvanized, Wood Staves, Drop Side Handles.

No	7	8	9	10
Size, inches	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	3	4	5	6
Without Covers, per dozen	40.00	46.00	52.00	58.00

Monitor Ash Cans, Galvanized, Extra Heavy for Hoisting.

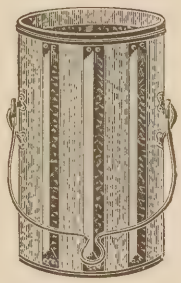
No	102½	103	104	105	106
Size, inches	14 x 18	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	2	3	4	5	6
Without Covers, per dozen	48.00	52.00	58.00	64.00	70.00



MONITOR ASH CAN.
Galvanized, with Improved Hinge Cover, Drop Side Handles.



BERLIN ASH CAN.
Japanned Angle Iron Staves, Drop Side Handles, without Cover.



BERLIN ASH CAN.
Galvanized Angle Iron Staves, Bailed, Extra Heavy for Hoisting, without Cover.

Monitor Ash Cans, Galvanized, Improved Hinged Covers, Drop Side Handles.

No	13	14	15	16
Size, inches	15 x 26	17 x 26	18 x 26	20 x 26
With Covers, per dozen	46.00	52.00	58.00	64.00

Berlin Ash Cans, Japanned, Angle Iron Staves, Drop Side Handles.

No	070	080	090	0100
Size, inches	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	3	4	5	6
Without Covers, per dozen	46.00	52.00	58.00	64.00

Berlin Ash Cans, Galvanized, Angle Iron Staves. Extra Heavy for Hoisting.

No	7½	8½	9½	10¼
Size, inches	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	3	4	5	6
Without Covers, per dozen	64.00	70.00	76.00	82.00

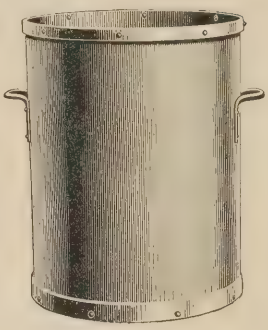
Ash Cans, Oily Waste Cans and Covers.



CHAMPION ASH CAN.
Galvanized, with Double Ribbed Steel Staves, Drop Side Handles. Without Cover.



BERLIN ASH CAN.
Galvanized, Angle Iron Staves, Drop Side Handles. Without Cover.



ENGINEERS' ASH CAN.
Black Steel. Without Cover.

Champion Galvanized Ash Cans.

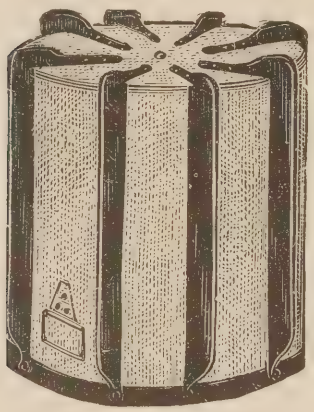
No	170	180	190	200
Size, inches	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	3	4	5	6
Per dozen, without Covers	42.00	48.00	54.00	60.00

Berlin Galvanized Ash Cans.

No	70	80	90	100
Size, inches	15 x 26	17 x 26	18 x 26	20 x 26
Size No. of Cover	3	4	5	6
Per dozen, without Covers	46.00	52.00	58.00	64.00

Engineers' Black Steel Ash Cans.

Size, inches	15 x 18	15 x 24	16½ x 24	18 x 24
Per dozen, without Covers	72.00	84.00	90.00	96.00



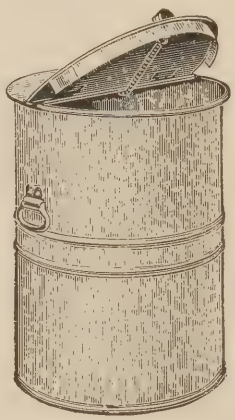
GALVANIZED IRON INDESTRUCTIBLE ASH CAN.
With Wrought Iron Ribs.

No	15	18	20
Size, in.	15 x 26	18 x 26	20 x 26
Per doz.	54.00	60.00	72.00



UNEXCELLED BLACK STEEL ENGINEERS' ASH CAN.
With Reinforced Body and Strapped Bottoms.

No	2	3	4	5
Size, in.	15x24	17x24	18x24	20x24
Per doz.	72.00	84.00	90.00	108.00



SAFETY SELF-CLOSING WASTE OR REFUSE CAN.

No	1/0	2/0	3/0	4/0
Size, in.	15x24	17x24	18x24	20x24
Per doz.	66.00	72.00	84.00	102.00



ASH CAN COVER.
Galvanized.

Ash Can Covers—Galvanized.

No	1	2	3	4	5	6
Size, inches	13	14	15	17	18	20
Per gross	34.00	40.00	54.00	66.00	80.00	96.00

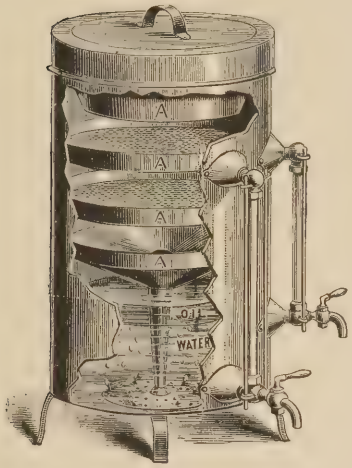


OILY WASTE CAN.
Galvanized, with Self-Closing Cover.

Oily Waste Cans—Galvanized.

No	1	2	3	4	5	6	7	8
Size, in.	11¼ x 15	12 x 18	13 x 20	14 x 22	16 x 24	18 x 26	20 x 20	24 x 36
Per doz.	16.00	22.00	28.00	34.00	40.00	78.00	96.00	126.00

Waste Oil Filters and Oil Tanks.



INTERIOR VIEW, WASTE OIL FILTER.

Waste Oil Filter.

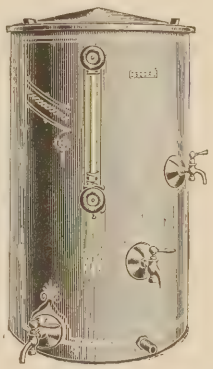
This Filter is simple in construction, entirely automatic in its operation, and thoroughly practical. It reclaims waste oil and purifies new oil.

The filtering trays being removable, can be cleaned quickly.

Made in three sizes, neatly japanned, with brass trimmings.

No	1	2	3
Capacity, gallons	15	30	60
Each	18.00	30.00	45.00

The Cross Oil Filter.

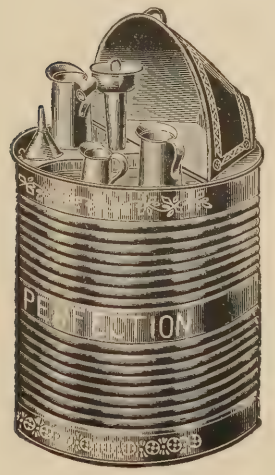


The illustration show the construction of our Filter. They are made of extra heavy galvanized iron, all joints soldered, lapped and riveted. They are neatly painted and hand decorated in gold, with polished brass fittings and bosses and nickel plated rim, making the Filter an ornament to any engine room. All inside work is rigidly braced and reinforced. The "Special" filters are fitted with a cover having nickel plated handles ; also with a gauge to show amount of filtered (pure) oil in reservoir. Any size of cocks or gate valves will be furnished at buyer's option.

The bottom chamber is filled with pure, warm water, which is heated by means of a steam pipe (exhaust) passing through the Filter. Very little steam is required, and if the Filter is kept in a warm place, it will not be necessary to make steam connection at all.

Sizes No. 3 and larger have extra heavy brass fittings, water gauge and cover. If desired we can furnish water gauge and cover on the Nos. 1 and 2 Filter at 4.50 additional.

No	1	2	3	4	5	6	7	8	9	10	11	12
Capacity, Gals. per Day	15–20	3–5	30–40	50–60	70–90	100–120	120–150	150–200	200–250	250–300	300–400	400–500
Each	$25	15	60	75	90	120	140	200	250	300	400	500



Improved Perfection Oil Tanks.

Corrugated Bodies and Bottoms.

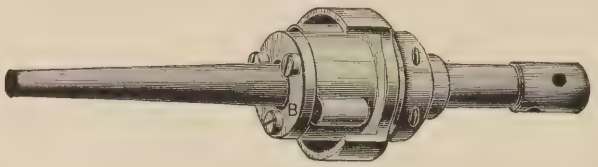
With steady stream pumps which can be detached and used in pumping oil from barrel into tank. Each Tank furnished with a 1-pint, 1-quart and 2-quart tin measure and a 1-quart tin funnel.

Packed one in a crate.

Oil Tanks.

Capacity, gallons	30	60	106
Each	5.30	6.30	10.50

Tube Expanders and Leak Stoppers.

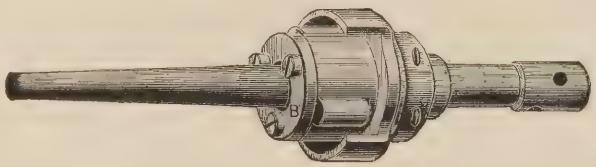


DUDGEON IMPROVED TUBE EXPANDER.

This Tool will expand two sizes up to two inches, and three sizes above

Dudgeon Improved Tube Expanders.

Tubes.	Each.	Tubes.	Each.
1⅝ and 1¾ inches	20.00	3½, 3⅝ and 3¾ inches	70.00
1¾ " 1⅞ "	20.00	3¾, 3⅞ " 4 "	75.00
1⅞ " 2 "	25.00	4, 4⅛ " 4¼ "	80.00
2, 2⅛ and 2¼ "	30.00	4¼, 4⅜ " 4½ "	85.00
2¼, 2⅜ " 2½ "	36.00	4½, 4⅝ " 4¾ "	85.00
2½, 2⅝ " 2¾ "	39.00	4¾, 4⅞ " 5 "	90.00
2¾, 2⅞ " 3 "	45.00	5, 5¼ " 5½ "	100.00
3, 3⅛ " 3¼ "	52.00	5½, 5¾ " 6 "	105.00
3¼, 3⅜ " 3½ "	60.00	6, 6¼ " 6½ "	115.00



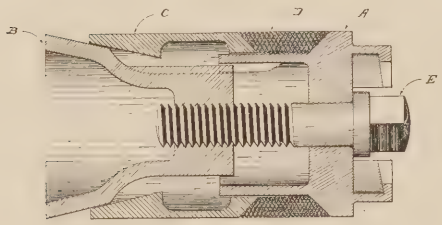
DUDGEON ROLLER TUBE EXPANDER.

For one size tube only.

Size Tube	1¾	1⅞	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6	7
Each	25.00	25.00	30.00	35.00	42.00	48.00	55.00	60.00	70.00	85.00	100.00	120.00	130.00	180.00

With these Expanders, the tubes can be expanded without striking a blow on them, thus rendering them far less liable to crack. Leaky ones can be tightened, with steam on the boiler, with perfect safety. One Expander will answer for any thickness of tube sheet, thus avoiding the necessity of an Expander for each different thickness of sheet.

The Blamey Patent Tube Stopper.



The Blamey Patent Tube Stopper has been designed with a full knowledge of the requirements of a first-class Tube Stopper. It is intended to supply the demand for a device which is both practical and effective as a stopper for leaky tubes. It cannot be forced out nor leak under pressure, and can be applied without drawing fires in order to get into the back end of a furnace, as it is applied from front end of boiler. The controller fitting is supplied threaded, to be attached to the proper length of pipe. A short section of socket wrench is also supplied, to be welded to a rod of suitable length projecting slightly beyond end of pipe. The rod and pipe can be readily furnished and fitted by the engineer in charge. Reference to the illustration, and the following description will give an idea of its construction and application.

Head piece A has projecting lugs which lock fast to a controller fitting furnished for the purpose, to which is screwed a piece of common pipe of suitable length. A socket wrench is also furnished, to be welded to a piece of rod, the same being passed through the pipe, and the outer end projecting beyond the pipe, far enough to be grasped by a wrench for turning the same, the inner or socket end engaging the bolt head. The Stopper now attached to the controller is passed into the tube and pushed to the back end or beyond the leak, and the wrench applied to the projecting rod end is turned, causing the bolt to turn, thus drawing the Head A and Expander B toward each other, which in turn expands the rear end of Sleeve C to a frictional locking contact with the tube. A continued turning of the rod contracts the Stopper in its length, causing the packing to expand to a steam and water tight sealing to the inner side of tube, when the rod and wrench are withdrawn. The front end of tube is stopped in the same manner.

Where it is impossible to use the internal Stopper owing to end of tubes leaking, a modified design, embodying the same principle is supplied, having an end cap particularly for locomotives, upright boilers and all tubes where it is impossible to use an internal Stopper.

When ordering specify External diameter of Tube.

Price per set of two Stoppers, 1.50 per inch of External Tube diameter.

Tube Expanders.



CLASS A. ROLLER TUBE EXPANDER.

This illustration represents our improved type of Roller Expander, which is so familiar to users of this style tool that a detail description is not necessary. We offer this grade Expander as a competition tool, and the low price at which it is sold places it within reach of all who have but an occasional repair job, or whose work does not warrant the purchase of a higher grade Expander.

The principal wearing parts, the mandrels and rolls, are made of a good grade steel, properly hardened to resist wear, and the tools are guaranteed to give good ordinary service.

Diameter, inches	1	1¼	1½	1¾	1⅞	2	2¼	2½	2¾
Each	10.00	10.00	10.00	10.00	10.00	10.00	12.00	14.00	16.00
Diameter, inches	3	3¼	3½	3¾	4	4¼	4½	5	6
Each	18.00	20.00	23.00	25.00	30.00	35.00	40.00	50.00	60.00

Above sizes refer to outside diameters of tubes.



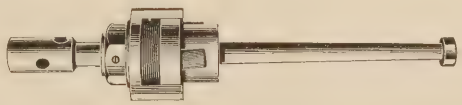
CLASS C. ROLLER TUBE EXPANDER.

For work that requires an Expander with a detachable mandrel, we make the above style, which is fitted with a cap to retain the rolls and the mandrel without nut.

This style made in but one grade; that the very best. All wearing parts are of steel and hardened.

Diameter, inches	1	1¼	1½	1¾	1⅞	2	2¼	2½	2¾
Each	10.00	10.00	10.00	10.00	10.00	10.00	12.00	14.00	16.00
Diameter, inches	3	3¼	3½	3¾	4	4¼	4½	5	6
Each	18.00	20.00	23.00	25.00	30.00	35.00	40.00	50.00	60.00

Above sizes refer to outside diameters of tubes.



CLASS H. PATENT SELF-FEED ROLLER TUBE EXPANDER.

This tool is much quicker in its operations, and has many advantages over the ordinary Expander. The rolls, being set at an angle with the mandrel, have a tendency to draw it into the tool, thus dispensing with the hammering of the mandrel.

As soon as mandrel is forced against the rolls it immediately takes a hold and gradually feeds its way in, thus insuring a steady, even expansion of the tube.

Another improved feature of this Expander is the thrust ring, threaded to the body, which may be adjusted to allow tubes to project any required length for beading.

By the use of the nut on the end of the mandrel, we overcome the objection to the cap used on the old style tool. There are no screws to become broken or loose, and all parts are kept intact.

This is the only style Expander that can be used successfully in connection with pneumatic or other power appliances, and mandrel can be made to fit any socket.

In general design the tools intended for power are the same as those intended for hand use, except the feed is modified, which can be varied as the occasion requires.

This style tool is made in but one grade; that the very best. All the wearing parts are hardened to withstand the necessary hard wear to which an Expander is subjected.

We always furnish right hand feed unless for special purposes they are ordered left hand.

1	inch	12.00	1¾	inch	14.00	2¼	inch	18.00	3	inch	26.00	3¾ inch 35.00	4½ inch 44.00
1¼	"	12.00	1⅞	"	15.00	2½	"	20.00	3¼	"	29.00	4 " 38.00	5 " 50.00
1½	"	12.00	2	"	16.00	2¾	"	23.00	3½	"	32.00	4¼ " 41.00	6 " 60.00

Flue Cleaners.



STEEL WIRE TUBE BRUSH.



INGALL'S ADJUSTABLE TUBE SCRAPER.



SPENCER STEEL BRUSH TUBE CLEANER.

Steel Wire Tube Brush.

Size	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6	7
Each	1.10	1.10	1.20	1.20	1.25	1.40	1.50	1.60	1.75	2.00	2.25	2.50	2.75	3.00	3.00	3.50

Ingall's Adjustable Tube Scraper.

Size	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6
With Brush	3.00	3.40	3.75	4.15	4.50	4.90	5.25	6.00	6.75	7.50	9.00
Without Brush	2.00	2.25	2 50	2.75	3.00	3.25	3.50	4.00	4.50	5.00	6.00

Spencer Steel Brush Tube Cleaner.

Size	2	2¼	2½	2¾	3	3¼	3½	3¾	4
Each	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00



CHRISTOFFEL ELLIPTICAL SCRAPER.



CHRISTOFFEL COIL TUBE CLEANER.



NATIONAL STEEL TUBE CLEANER.

Christoffel Elliptical Scraper.

Size	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4
Each	2.00	2.00	2.00	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00

Christoffel Coil Tube Cleaner.

Size	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4
Each	1.00	1.00	1.00	1.00	1.10	1.20	1.30	1.40	1.50	1.65	1.75	1.90	2.00

National Steel Tube Cleaner.

Size	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	5½
Each	2.00	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00	4.50	5.00	5.50



ENGINEERS' FAVORITE.



IMPROVED HURRICANE AUTOMATIC STEAM FLUE CLEANER.



THE SOOT SUCKER.

Engineers' Favorite.

Size	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5
Each	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00	4.50	6.25

Hurricane Automatic Steam Flue Cleaner.

Size, 2 to 2½ inch, with Hand Valve, each	6.00
" 3 to 3½ " Automatic, each	7.00
" 4 to 4½ " " "	8.00

A powerful and effective machine. Valve opens on entering Tube—closes when withdrawn.

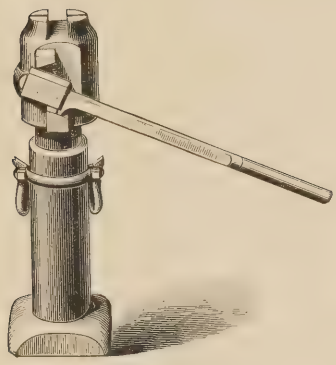
The Soot Sucker.

Size	2	2½	3	3½	4	4½	5
Price	10.00	10.50	11.00	11.50	12.00	12.50	13.00

Handle and Fittings, any size 3.50

The Cleaner can be placed on the handle and fittings of any of the various blowers, or a straight piece of pipe, if desired.

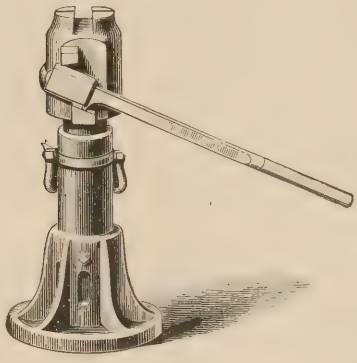
Hydraulic Jacks.



PLAIN JACK.

For use in presses, or where there is a firm support.

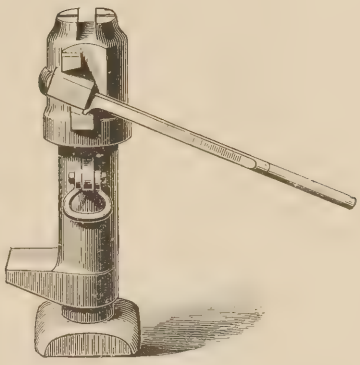
Tons Lift.	Run Out.	Height.	Each.
4	12	24	$60
7	12	25	70
7	18	32	73
10	12	25	80
10	18	32	95
10	24	39	110
15	12	26	100
15	18	32	125
15	24	39	150
20	12	26	120
20	18	33	145
20	24	39	170
30	9	22	150
30	12	26	175
30	18	33	210
40	12	27	210
40	18	34	250



BASE JACK.

For railroad work, or where a broad base, insuring stability, is required.

Tons Lift.	Run Out.	Height.	Each.
4	12	23	$60
7	12	25	80
7	18	31	85
10	12	25	95
10	18	31	110
10	24	39	125
15	12	25	125
15	18	32	150
15	24	39	175
20	12	26	150
20	18	33	175
20	24	39	200
30	9	22	170
30	12	26	200
30	18	33	235
40	12	27	240
40	18	33	280
50	12	28	260
50	18	34	310



CLAW OR GROUND LIFTING JACK.

For machine shops, and for work that will not permit the head to be placed under the load.

Tons Lift.	Run Out.	Height.	Each.
4	12	24	$60
7	12	25	85
7	18	31	88
7	24	38	90
10	12	25	100
10	18	32	120
10	24	39	145
15	12	26	150
15	18	32	185
20	12	26	200
20	18	33	240
30	12	26	250

Screw Jacks.



JACK SCREW.

	Diameter of Screw.	Height of Jack When Turned Down to the Lowest Point. Inches.	Net Rise. Inches.	Whole Height. Inches.	Estimated Lifting Capacity. Tons.	Each.
No. 1.	1¼ inch.	8	4	12	5	2.50
" 2.	1¼ "	10	6	16	5	3.00
" 3.	1½ "	10	5	15	8	3.25
" 4.	1½ "	12	7	19	8	3.75
" 5.	1½ "	14	9	23	8	4.00
" 6.	1¾ "	12	6	18	12	4.25
" 7.	1¾ "	14	8	22	12	4.50
" 8.	1¾ "	16	10	26	12	5.00
" 9.	1¾ "	18	12	30	12	5.50
" 10.	2 "	12	5	17	15	5.50
" 11.	2 "	14	7	21	15	6.00
" 12.	2 "	16	9	25	15	7.00
" 13.	2 "	20	13	33	15	8.00
" 14.	2½ "	14	8	22	20	8.50
" 15.	2½ "	16	10	26	20	9.50
" 16.	2½ "	20	14	34	20	11.00
" 17.	2½ "	24	18	42	20	13.00

Car Jacks.

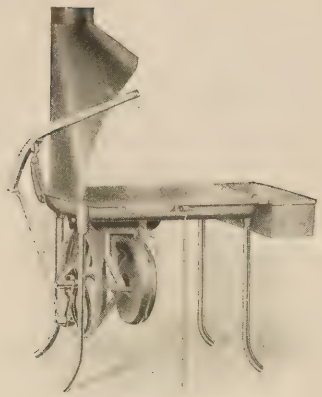
No. 17½.	2 inch.	10	4	14	15	5.00
" 18.	2 "	12	5	17	15	5.50
" 19.	2 "	14	7	21	15	6.00
" 20.	2 "	16	9	25	15	7.00

These Jacks have cast iron barrels, with steel screws cut in a lathe. There are no better Jacks made.
Furnished with roller bearings at about fifteen per cent. additional.

The Nason Portable Forges.

Portable Forge, Blacksmiths' Type.

This forge is guaranteed to produce a welding heat on 3-inch iron in five minutes; on 4-inch in ten minutes.



No. 0.
HAND FORGE.
With Water Tank and Sheet Iron Hood.

No. 0. Portable Hand Forge.

Height to top of Bowl, 30 inches.
Size of Hearth, 28 x 40 inches.
Diameter of Fan, 14 inches.
Weight, without Tank, 250 lbs.; with Tank, 300 lbs.

Price, with Tank---- 54.00 Without Tank---- 50.00

No. 0. Portable Power Forge.

Same design and construction as No. 0 Hand Forge illustrated, but is built with tight and loose pulleys; also cut-off for the blast, by which the fire may be regulated to any degree; can also be furnished with hand power attachment for use at times when steam power is not available.

Size Fan, 14 inches.
Size Fire Pan, 28 x 50 inches.
Water Tank, 28¾ inches long, 9 inches wide by 6½ inches deep.
Weight, 250 lbs.
Price, with Tank-------- 58.00 Without Tank-------- 54.00
" Hand Power Attachment, no Tank---------- 58.00
" " " and Tank ---------- 62.00

No. 1. Portable Hand Forge.

Has a half open hood, and is guaranteed to yield a welding heat on 2½ and 3-inch iron in from five to ten minutes. It will do heavier work if required. Adapted for tool work, machinists, plumbers, miners, marble works, millers, railroad repair shops, locksmiths, planters and repairs in general.

Height to top of Bowl, 29 inches.
Size of Hearth, 21 x 27 inches.
Diameter of Fan, 10 inches.
Weight, 140 lbs.

Price ---------- 40.00

No. 2. Portable Hand Forge.

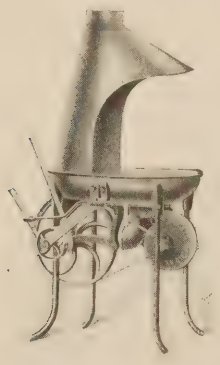
Same size and construction as No. 1, but with Closed Hood---------- 42.00

No. 3. Portable Hand Forge.

Same size and construction as Nos. 1 and 2, but without Hood ------- 36.00



NO. 1.
HAND FORGE.
With Half Open Hood.



No. 1.
POWER FORGE.
With Half Open Hood.

No. 1. Power Forge with Half Open Hood.

This machine is designed for lighter work than the No. 0 Power Forge above described. Furnished with hand power attachment if desired; also built with tight and loose pulleys. A blast gate is provided. Especially adapted for machinists' use.

Size of Fan, 10 inches.
Size of Fire Pan, 31 x 27 inches.
Weight, 150 lbs.

Price ---------- 45.00
With Hand Power Attachment------- ---------- 48.00

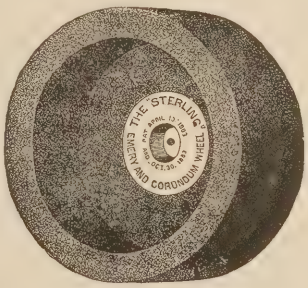
Emery Wheels.



FLAT EMERY WHEEL.

Sterling Patent Emery and Corundum Wheels.

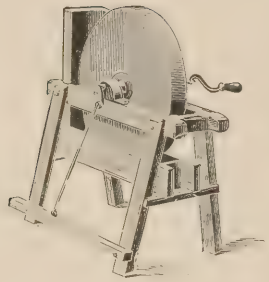
Diam.	Rev. per Minute.	Thickness of Wheels. 1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/2	4
1	18000	.25	.30	.30	.35	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.90	1.00
1 1/2	14000	.30	.35	.40	.45	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	1.00	1.10
2	10000	.35	.45	.50	.55	.55	.60	.65	.70	.75	.80	.85	.90	.95	1.00	1.10	1.20
2 1/2	8500	.40	.55	.65	.70	.75	.85	.95	1.05	1.15	1.25	1.35	1.45	1.55	1.65	1.85	2.05
3	7000	.50	.65	.80	.90	.95	1.10	1.25	1.40	1.55	1.70	1.85	2.00	2.15	2.30	2.60	2.90
3 1/2	6035	.60	.80	.95	1.05	1.15	1.35	1.55	1.75	1.95	2.15	2.35	2 55	2.75	2.95	3 35	3.75
4	5300	.75	.95	1.10	1.25	1.35	1.60	1.85	2.10	2.35	2.60	2.85	3.10	3.35	3.60	4.10	4.60
4 1/2	4700	.90	1.10	1.25	1.40	1.55	1.85	2.15	2.45	2.75	3.05	3.35	3.65	3.95	4.25	4.85	5.45
5	4200	1.00	1.20	1.40	1.60	1.80	2.20	2.60	3.00	3.40	3.80	4.20	4 60	5.00	5.40	6.20	7.00
6	3500	1.40	1.60	1.75	2.10	2.40	3.05	3.70	4.35	5.00	5.65	6.30	6.95	7.60	8.25	9.55	10.85
7	3000	1.85	2.00	2.15	2.60	3.00	3.85	4.70	5.55	6.40	7.25	8.10	8.95	9.80	10.65	12.35	14.05
8	2600	2.10	2.35	2.60	3.10	3.60	4.60	5.60	6.60	7.60	8.60	9.60	10.60	11.60	12.60	14.60	16.60
9	2300	2.50	2.80	3.10	3.70	4.25	5.40	6.55	7.70	8.85	10.00	11.15	12.30	13.45	14.60	16.90	19.20
10	2100	3.00	3.35	3.65	4.35	5.00	6.35	7.70	9.05	10.40	11.75	13.10	14.45	15 80	17.15	19.85	22.55
12	1750	3.60	3.80	4.00	5.00	6.00	7.40	9.00	10.70	12.75	14.00	15.70	17.40	19.00	20.75	24.25	27.50
14	1500	4.05	5.15	6.25	7.35	8.45	10.60	12.85	15.05	17.25	19.45	21.65	23.85	26.05	28.25	32.65	37.05
16	1300	----	----	----	----	10.85	13.70	16.55	19.40	22.28	25.00	27.95	30.80	33.65	36.50	42.20	47.90
18	1150	----	----	----	----	13.25	17.00	20.75	24.50	28.25	32.00	35.75	39.50	43.25	47.00	54.50	62.00
20	1050	----	----	----	----	----	20.25	24.75	29.25	33.75	38.25	42.75	47.25	51 75	56 25	65 25	74.25
22	950	----	----	----	----	----	25.00	31.00	37.00	43.00	49.00	55.00	61.00	67.00	73.00	85 00	97.00
24	850	----	----	----	----	----	29.00	36.00	43.00	50.00	57.00	64.00	71.00	78.00	85.00	99.00	113.00
26	775	----	----	----	----	----	----	43.00	51.00	59.00	67.00	75.00	83.00	91.00	99.00	115.00	131.00
30	705	----	----	----	----	----	----	----	61.00	72.00	83.00	94.00	105.00	116.00	127.00	149.00	171.00
36	520	----	----	----	----	----	----	----	95.00	110.50	126.00	141.50	157.00	172.50	188.00	219.00	250.00



Emery Cylinders and Cup Wheels.

Diam.	Thickness of Rim. 1	1 1/2	2	2 1/2	3	3 1/2	4
8	15.50	----	----	----	----	----	----
9	16.50	22.00	----	----	----	----	----
10	17.75	24.25	29.50	----	----	----	----
12	18.75	26.25	33.00	38.75	44.00	----	----
14	22.50	31.00	38.50	45.50	51.50	57.50	61.50
16	26.00	35.75	44.60	53.00	60.25	67.60	73.00
18	28.80	40.25	51.40	61.40	71.00	79.00	86.90
20	30.90	44.00	56.25	67.40	78.50	87.60	97.00
22	35.00	49.75	65.00	79.40	91.50	103.90	115.50
24	37.50	54.25	70.50	86.25	99.50	113.60	126.60
26	39.75	59.80	77.00	93.00	109.25	124.75	139.25

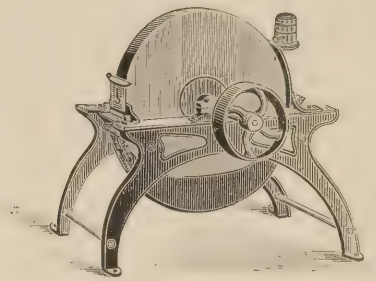
Grindstones.



HAND OR FOOT POWER.
Mounted on Heavy Hardwood Frames.

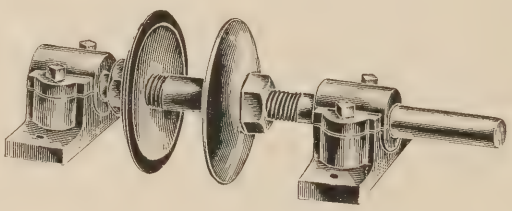
50 pounds,	18 inch	diameter,	each		11.00
60 "	20 "	"	"		11.50
80 "	22 "	"	"		12.50
100 "	24 "	"	"		14.00
120 "	26 "	"	"		15.00
140 "	28 "	"	"		16.00
160 "	30 "	"x 2½ to 3 in.	"		17.50
225 "	30 "	"x 4 inch,	"		22.00
325 "	36 "	"x 4 inch,	"		30.00

Knocked down for export when required.



MACHINIST GRINDSTONE.
Mounted on Iron Frame.

30 inch, heavy, each	52.00
36 " " "	80.00
Add for Shield and Water Bucket	4.00
25 inch, light, each	28.00
30 " " "	40.00
Add for Shield and Water Bucket	3.00



GRINDSTONE ARBORS.

1¼ inch, each	10.50
1½ " "	12.50
2 " "	16.50

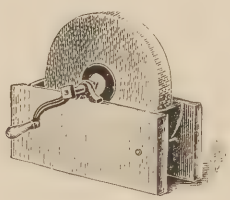


No. 3.
FAMILY GRINDSTONE.

No. 3 has a stone 14 x 1¾ inches. The increased size and weight give it greater speed and capacity. As the cut shows the stone is operated by a wooden pitman, which will prove durable and satisfactory.

It weighs, boxed, 85 pounds.

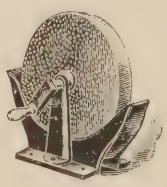
Each 4.50



SHIP STONE.

Ship Stones.

12 inch, each	2.50
14 " "	2.75
16 " "	3.00
18 " "	3.25

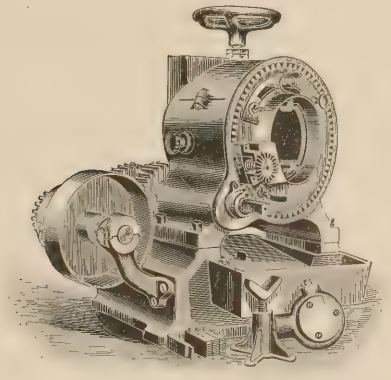


FAMILY GRINDSTONE.

Family Grindstones.

6 inch, per dozen	14.00
8 " "	16.00
10 " "	18.00
12 " "	21.00

The Forbes Patent Die Stock.



No. 78.
HAND OR POWER MACHINE.
Range 2½ to 4 inch, Right Hand.

The Forbes Patent Die Stock as Arranged for Either Hand or Power Use.

The machine which we illustrate on this page is an adaptation of our hand machine, already described, for either hand or power use. It consists of our regular hand machine supplied with a power base, elongated pinion, countershaft, etc., and the machine can either be worked as a power machine or taken from the base and carried out on outside work as a hand machine. They are designed to stand on the end of a bench, thus giving great economy of space, and allowing a length of pipe to be handled in a much smaller room than with other designs of machines.

We also can furnish a stand when desired for either our hand or power machines, to stand on the floor, for which we charge $10 extra.

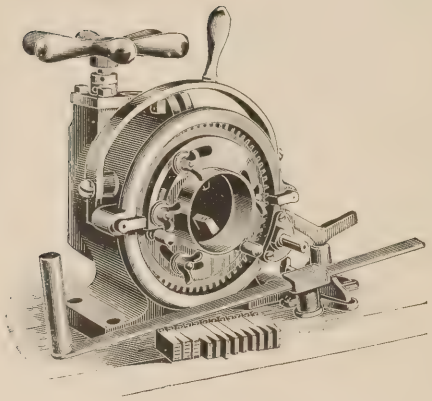
Price List for Hand or Power Machines.

No.	Range.	Weight, Net Pounds.	Weight, Gross Pounds.	Price.
*70	¼ to 2 inch R. and L	320	430	100.00
*72	¼ " 2 " for Solid Dies (without dies)	315	425	95.00
*74	1 " 3 " R. H., 1 to 2 inch L. H	340	459	125.00
*76	¾ " 3 " R. H., ¾ to 2 inch L. H	343	462	135.00
*77	¼ " 3 inches, R. and L	348	467	155.00
†78	2½ " 4 " R. H	515	652	140.00
*80	1½ " 4 " R. H	516	653	150.00
*82	1½ " 4 " R. and L	517	654	165.00
*84	1 " 4 " R. H	516	653	160.00
*86	1 " 4 " R. and L	527	664	180.00
†88	4 " 6 " R. H	635	813	170.00
†90	3½ " 6 " R. H	640	818	180.00
†92	2½ " 5 " R. H	640	818	200.00
†94	2½ " 6 " R. H	645	823	225.00
*96	1 " 6 " R. H	665	843	250.00
*98	1 " 6 " R. and L	675	853	285.00
*99	2½ " 8 " R. and L	1130	1215	535.00
†100	2½ " 8 " R. H	1108	1193	500.00
†102	2½ " 10 " R. H	1510	1600	700.00
*104	2½ " 10 " R. H	1520	1600	700.00
*106	2½ " 10 " R. and L	1560	1650	750.00
†107	2½ " 12 " R. H	2500	2700	900.00
*108	2½ " 12 " R. and L	2550	2750	1000.00

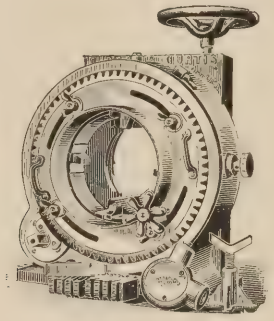
* Pressure feed machine. † Lead screw machine.

These prices include countershaft, ratchet wrench and pipe rest. Nos. 70 to 77 have no cut-off attachment unless especially ordered.

The Forbes Patent Die Stocks.



No. 30.
HAND MACHINE.
Range ¼ to 2 inch, Right and Left.



No. 56.
HAND MACHINE.
Range 2½ to 6 inch, Right and Left.

The Forbes Patent Die Stocks for Hand Power.

These machines consist of a die-carrying gear surrounded and supported by a shell with a pipe vise attached to the back of it and a pinion or small gear imbedded in its side; a face plate by which the dies are adjusted. The pipe is pushed into the machine from the back and clamped in the vise by the hand wheel shown on top of the machine. The die-carrying gear is then revolved by means of the crank and pinion. As the dies revolve a slight pressure on the top lever forces the gear back into the shell and the dies on the pipe. When the thread is cut to the required length the face plate is turned to the left, which draws the dies back and the pipe can be removed.

The vise is self-centering and the dies are adjustable to any variation of the fittings.

All sizes of machines have cut-off attachments except the Nos. 30, 32, 34, 36 and 37. On these sizes cut-off attachments are not placed, as a roller cutter is ordinarily used with them.

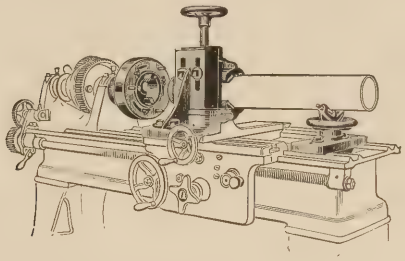
Price List for Hand Machines.

No.	Range.	Weight, Net Pounds.	Weight, Gross Pounds.	Price.
*30	¼ to 2 inch, both Right and Left	138	178	50.00
*32	¼ " 2 " for Solid Dies (without dies)	130	170	45.00
*34	1 " 3 " R. H., 1 to 2 inch L. H	155	195	75.00
*36	¾ " 3 " R. H., ¾ to 2 inch L. H	160	200	85.00
*37	¼ " 3 inches, R. and L	160	200	105.00
†46	2½ " 4 " R. H	220	270	85.00
*38	1½ " 4 " R. H	222	272	100.00
*40	1½ " 4 " R. and L	225	275	115.00
*42	1 " 4 " R. H	223	273	110.00
*44	1 " 4 " R. and L	235	285	130.00
†50	4 " 6 " R. H	298	376	115.00
†52	3½ " 6 " R. H	298	376	130.00
†54	2½ " 5 " R. H	300	378	150.00
†56	2½ " 6 " R. H	303	381	175.00
†62	2½ " 6 " R. H. (extra heavy)	750	885	300.00
*58	1 " 6 " R. H	330	408	190.00
*60	1 " 6 " R. and L	348	426	235.00
*63	2½ " 8 " R. and L	625	750	360.00
†64	2½ " 8 " R. H	600	725	325.00
†66	2½ " 10 " R. H	750	880	500.00
*67	2½ " 10 " R. H	760	890	500.00
*68	2½ " 10 " R. and L	800	950	550.00
†69	2½ " 12 " R. H	1000	1200	650.00
*69½	2½ " 12 " R. and L	1050	1250	750.00

Nos. 30 to 37 have no cut-off attachment unless especially ordered.

*Pressure feed machine. †Lead screw machine.

Pipe Threading Attachment for Lathes.



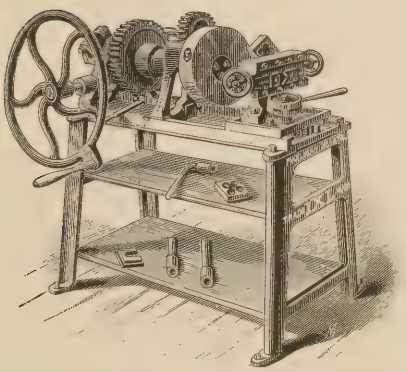
This attachment consists of a die head and dies to be mounted on the spindle like a chuck, an adjustable vise to be attached to the carriage and an adjustable pipe rest. The dies are opening and adjustable to any variations of the fittings, and the vise is self-centering. It can be quickly adjusted to any make or size of lathe, and by its use the lathe can be turned into a power pipe threading machine, which will do rapid and accurate work.

Pipe Threading Attachments for Lathes.

		Weight. Pounds.	Price.
No. 1.	Range ¼ to 2-inch. Both Right and Left, for lathe not less than 10-inch swing	135	50.00
" 2.	Arranged for Solid Pipe or Bolt Dies, but without dies	130	38.00
" 3.	(For Bolts), Range ¼ to 2 inch, without dies	130	40.00
	Bolt dies 3.00 per set of three extra.		
" 6.	Range 1 to 4 inch. Right Hand, for lathe not less than 15-inch swing	210	75.00
" 8.	" " " " and Left Hand, for lathe not less than 15-inch swing	215	95.00
" 10.	" 2½ to 6 inch. " Hand, for lathe not less than 20-inch swing	325	130.00
" 12.	" " 8 " " " " " " 28 "	605	225.00

The I. X. L. Pipe Threading Machine.

This Machine is Simple in Construction, Easy to Work, Not Liable to Get Out of Order, and Requires no Skilled Labor.



I. X. L. PIPE THREADING MACHINE.

The arrangement of the gearing permits the machine being adjusted to the work to be done, enabling one man to screw two-inch pipe with ease. There are

Three Changes of Speed.

The fast speed cuts ¼, ⅜ and ½; the next, ¾, 1 and 1¼ inches; and the slowest, 1½ and 2 inches. The changes are made by the movement of the lever in front of the machine.

The patent concentric gripping chuck is of substantial construction, having three jaws moved to the center by one screw—centering the pipe true. It has not its equal as a chuck for gripping pipe for general use.

The machine is provided with a novel chuck on the back end of the spindle, for centering the pipe, doing away with guides. The die head is arranged with

Cutting-Off Tool Slide

and self-centering jaws, for steadying the pipe while being cut off. The die-starter is the long-lever working pinion in the rack at the bottom of the die head. It is a portable machine, weighing about four hundred and seventy-five pounds.

Crooked Threads Cannot be Cut,

as the pipe revolves and the die stands still. There are no loose guides to be changed or lost. The machine can be easily arranged to operate by belt power when desirable.

Hand Machine,

With set of right-hand solid dies ¼ to 2 inches, inclusive, fly wheel, and set of sockets for making nipples ¼ to 2 inches, complete 90.00

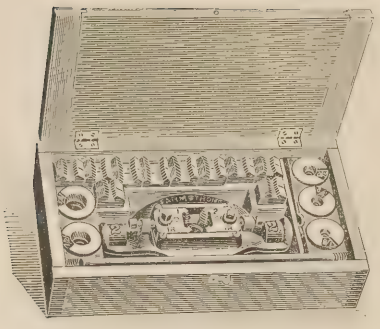
Power and Hand Machine,

With set of right-hand solid dies ¼ to 2 inches, inclusive, fly wheel, pulleys, countershaft and set of sockets for making nipples ¼ to 2 inches, complete 110.00

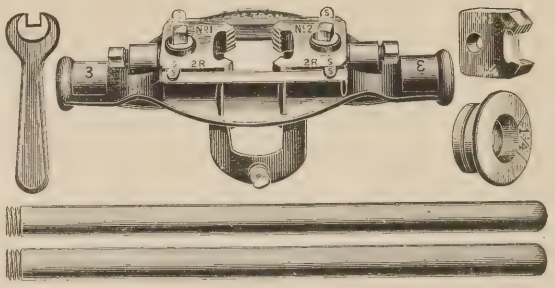
Speed of countershaft, 150 revolutions per minute. Pulleys, 11 inches in diameter—two loose, each 7 inches face, one fast, 3½ inches face. Weight hand machine, 475 pounds. Power and hand machine, 675 pounds.

Attachments fitted to these machines, when ordered, for threading bolts and tapping nuts 1¼ inches, and smaller sizes, at an additional cost.

Armstrong Stocks and Dies.



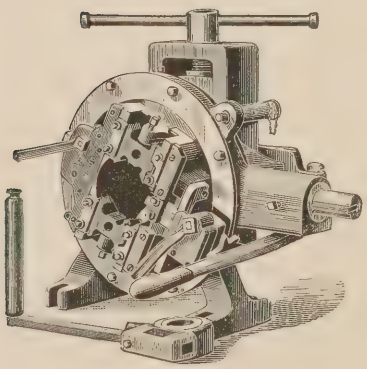
No. 1.
STOCK AND DIES.



No. 3.
STOCK AND DIES.

Number of Stock.	Threading Pipe from, Inches.	Price, Complete, with Right Hand Dies.	Price, Complete, with Right and Left Hand Dies.	Extra Dies, Right or Left Hand, Complete, Per Set.	Extra Bushings, Each.	Sets of Dies in Each Stock, Right Hand.	Sets of Dies in Each Stock, Right and Left Hand.
1	⅛ to ½	9.00	14.00	1.25	.20	4	8
2	¼ " 1	12.00	20.00	1.50	.25	5	10
2	⅛ " 1	14.00	23.00	1.50	.25	6	12
2½	½ " 1¼	12.00	18.00	3.25	.40	4	8
3	1¼ " 2	20.00	32.00	4.00	.50	3	6
3	1 " 2	24.00	40.00	4.00	.50	4	8
3	¾ " 2	28.50	48.50	4.00	.50	5	10
6	2½ and 3	40.00	55.00	15.00	1.00	1	2
7	2½ to 4	60.00	92.00	16.00	1.50	2	4
7	2½ and 3	45.00	60.00	16.00	1.50	1	2
7	3½ " 4	45.00	60.00	16.00	1.50	1	2

Armstrong Pipe Machines.



No. 0.
PIPE MACHINE.

Hand Machine, ¼ to 2 Inches.

		Without Stand.	With Stand.
No. 0.	Hand Machine, without Dies	50.00	60.00
" 0.	" " with Pipe Dies, ¼ to 2 in. R. H.	60.00	70.00
" 0.	" " " Bolt " ½ to 1½ R. H.	60.00	70.00

Power Machine, ¼ to 2 Inches.

		Power Attachment (no Countershaft.)	Power Attachment and Countershaft.
No. 0.	Machine, without Dies	65.00	93.00
" 0.	" with Pipe Dies, ¼ to 2 in. R. H.	75.00	103.00
" 0.	" " Bolt " ½ in. to 1½ in	75.00	103.00
" 0.	" Pipe Dies, ¼ to 2 in. R. H., with Stand	85.00	113.00

Dies.

Extra Dies are the same as used in No. 2 and No. 3 Stocks, viz., ¼ to 1 inch No. 2, and 1¼ to 2 inch No. 3. For Combination Pipe and Bolt Machine, take net price of Pipe Threading Machine and add net price of Bolt Dies. For Left Hand Dies, add net price from same list.

Attachments.

No. 0.	Machine Power Attachment, no Countershaft	15.00
" 0.	Machine Countershaft	28.00
" 0.	Machine Stand	10.00

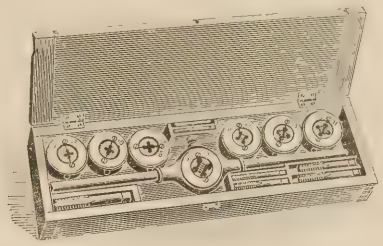
Unless specified, Machine is shipped without Stand, and for hand use.

Speed and Weights.

Speed of Countershaft, revolutions	260
Weight of Machine with Dies, pounds	135
Weight of Machine Stand, pounds	60

Conduit Dies furnished for No. 0 and No. 00 Machines same list as regular No. 2, No. 3 and No. 6 Dies.

Armstrong Bolt Stock and Dies and Packer Rachets.



No. 0.
MACHINIST'S SCREW PLATE.

Machinist's Screw Plate.

No. 0. Stock and Dies and Taps for Threading Bolts and Nuts, 7 sizes, 1/4 to 3/4, each 20.00

Armstrong Adjustable Stock and Dies for Threading Bolts.

No. 1. Stock 7 Bolt Dies, 1/4 to 3/4 ..... 15.00
" 1. " 4 Pipe and 7 Bolt Dies 20.00
" 1. " 7 Bolt Dies, 7 Taps 1/4 to 3/4 ..... 20.00
" 1. " 4 Pipe Dies, 7 Bolt Dies, 7 Taps 24.80

Sizes of Bolt Dies furnished 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4. Other sizes special. This stock will not take bolts sizes smaller than 1/4 inch nor larger than 3/4 inch.

Armstrong Adjustable Stock and Dies for Threading Bolts for Machinists and Blacksmiths.

No. 2. Stock 7 Bolt Dies, 1/4 to 1 1/4 ..... 20.00
" 2. " 7 " " 1/4 to 1 1/4 and 5 Pipe Dies 1/4 to 1 ..... 28.50
" 2. " 7 " " 7 Taps 1/4 to 1 1/4 ..... 30.00
" 2. " 7 " " 7 " 1/2 to 1 1/4 and 5 Pipe Dies 1/4 to 1 ..... 38.75

Stocks with Screws, Handles and Wrench.

No. 0. Stock Taking Bolt Dies, 1/4 to 3/4 ..... 1.50
" 1. " " Pipe Dies, 1/8 to 1/2 and Bolt Dies 1/4 to 3/4 ..... 3.25
" 2. " " " " 1/8 to 1, Bolt Dies 1/2 to 1 1/4 and Brass Pipe Dies 5/8 to 1 1/4 ..... 4.00

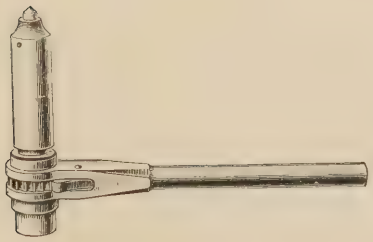
Dies.

No. 0. Dies, Bolt 1/4, 5/16, 3/8, 7/16, 1/2, 5/8 or 3/4, complete with Collet, each 1.95
" 0. " " 1/4, 5/16, 3/8, 7/16, 1/2, 5/8 or 3/4, without Collet, each 1.00
" 1. " " 1/4, 5/16, 3/8 or 7/16, Right Hand, each 1.50
" 1. " " 1/2, 5/8 or 3/4, " " " 1.75
" 2. " " 1/4, 5/16, 3/8 or 7/16, " " " 2.00
" 2. " " 1/2 or 5/8, Right Hand, each 2.00
" 2. " " 3/4, 7/8 or 1, " " " 2.00
" 2. " " 1 1/8 or 1 1/4, " " " 2.25

Bolt Dies, Left Hand, same price as above. When ordering please state which part of dies is wanted.

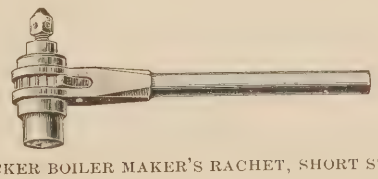
Packer Rachets.

These Rachets are adapted for Square Shank Drills only.



PACKER SLEEVE RACHET.

No	1	2	3	4	5
Handle, inches	10	12	16	18	24
Each	10.50	13.50	16.00	19.00	23.00



PACKER BOILER MAKER'S RACHET, SHORT STOCK.

No	1	2
Handle, inches	10	12
Each	9.00	10.50

Stocks and Dies.



No. A.
SOLID STOCK AND DIES.



No. AA.
SOLID STOCK AND DIES.

Solid Stocks and Dies.

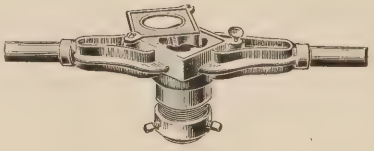
No. A Solid Stock and Die Threads, ⅛ to ½ inch Pipe, each	7.00
" AA " " ⅛ to 1 " "	10.00
Extra Die Plates for No. A, "	5.00
" " AA, Cutting ⅛, ¼ and ⅜ inch "	3.50
" " AA, " ½, ¾ " 1 " "	4.00



No. 1.
MALLEABLE STOCK.
With Solid Dies.



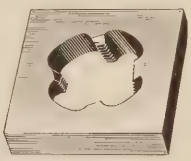
No. 2.
MALLEABLE STOCK.
With Solid Dies and Leader Screw.



No. 3.
MALLEABLE STOCK.
With Solid Dies and Leader Screw.

Malleable Stocks with Solid Dies.

No	0	1	1½	1¾	2	3	3½
Threads	⅛, ¼, ⅜, ½	¼, ⅜, ½, ¾, 1	¾, 1, 1¼	1, 1¼, 1½	1¼, 1½, 2	2½, 3	2½, 3
Size of Dies	2 x ½	2⅜ x ¾	3 x ¾	3 x ¾	3⅞ x ⅞	4⅞ x 1¼	4⅞ x 1¼
Complete	9.50	15.00	13.50	13.50	20.00	43.00	51.00
Stock Only	3.50	5.00	6.00	6.00	9.50	25.00	33.00
Extra Dies	1.50	2.00	2.50	2.50	3.50	9.00	9.00



SOLID DIE.



BUSHING.

Solid Pipe Dies—Right or Left Hand.

No	0	1	1½	1¾
Size	⅛, ¼, ⅜, ½	⅛, ¼, ⅜, ½, ¾, 1	⅛ to 1¼	⅛ to 1½
Measures	2 x ½	2½ x ¾ or 2⅜ x ¾	3 x ¾	3 x ¾
Each	1.50	2.00	2.50	2.50

No	2	3	3½
Size	½ to 1½	2½ and 3	2½ and 3
Measures	4⅞ x 1 or 3⅞ x ⅞ / 4 x 1 or 3⅞ x ⅞	5 x 1¼ or 4⅞ x 1¼	5 x 1¼ or 4⅞ x 1¼
Each	3.50	9.00	9.00

Bushings.

No	0	1	1½	1¾	2	3	3½
Size	⅛ to ⅜	⅛ to 1	⅛ to 1	⅛ to 1¼	½ to 1½	2 and 2½	2 and 2½
Each	.25	.35	.45	.45	.60	1.00	1.00

Die Frames.

No	1	1½	1¾	2	3	3½
Taking Number	0	1	1	1 or 1½	2	2
Each	.30	.40	.40	.50	.60	.60

Pipe Cutters.



STANWOOD IMPROVED PIPE CUTTER.



BARNES PIPE CUTTER.

Stanwood Improved Pipe Cutters.

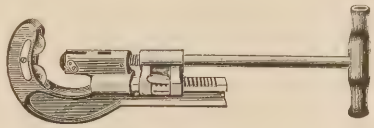
No	1	2	3
Cuts Pipe	⅛ to 1	¾ to 2	2 to 3
Each	1.50	2.25	7.00
Extra Blocks and Wheels, each	.45	.60	1.25
" Wheels, each	.12	.18	.25
Pins, each	.05	.05	.08

Barnes Pipe Cutters.

No	1	2	3	4	5	6	7
Cuts Pipe	⅛ to 1	½ to 2	1½ to 3	2½ to 4	4 to 6	6 to 8	9 to 12
Each	4.50	6.00	10.00	20.00	30.00	40.00	50.00
Extra Wheels, each	.25	.30	.40	.50	.75	.75	.75
" Wheel Pins, per dozen	1.00	1.00	1.00	2.00	2.00	2.00	2.00



SAUNDERS PIPE CUTTER.



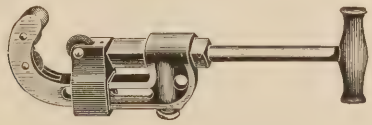
ARMSTRONG PIPE CUTTER.

Saunders Pipe Cutters.

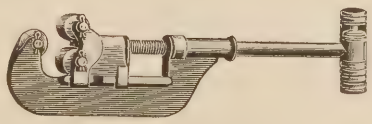
No	1	2	3	4	5
Cuts Pipe	⅛ to 1	1 to 2	2 to 3	2½ to 4	4 to 6
Each	3.00	4.50	11.00	18.00	28.00
Extra Blocks and Wheels, each	1.25	1.75	2.75	3.50	4.00
" Wheels, each	.24	.32	.60	.60	.60
" Rollers, "	.24	.32	.50	.50	.60
" Pins, "	.10	.10	.15	.15	.15

Armstrong Pipe Cutters.

No	1	2	3
Cuts Pipe	⅛ to 1¼	½ to 2½	1½ to 4
Each	4.50	6.00	15.00
Wheels or Rollers, each	.25	.30	.50



CURTIS PIPE CUTTER.



TRIMO PIPE CUTTER.

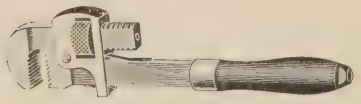
Curtis Pipe Cutters.

No	2
Range	⅛ in. to 2 in.
Price	6.00

Trimo Pipe Cutters.

Size No	1	2	3
Cuts, Pipe	⅛ to 1¼	½ to 2	1¼ to 3
Price, with Two Extra Wheels, Interchangeable Nut and Special Handle	4.25	6.25	12.25
Extra Nuts, each	.35	.35	.40
" Wheels, each	.30	.30	.40
" Rolls, each	.25	.30	.50
" Pins with Cotter Pins, per dozen	1.00	1.00	1.00
" Anti-friction Washers, "	.60	.60	.60
" Fork Block Carrier, each	.10	.10	.10

Wrenches.



STILLSON WRENCH.
Wood Handle. 6-inch to 18-inch.



STILLSON WRENCH.
Steel Handle. 6-inch to 14-inch.

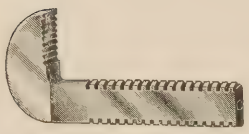


STILLSON WRENCH. 18-inch to 48-inch.

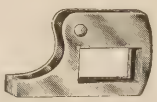
Stillson Wrenches.

Length when open	6	8	10	14	18	24	36	48
Grips, inches	⅛ wire to ½ pipe.	⅛ wire to ¾ pipe.	⅛ wire to 1 pipe.	¼ wire to 1½ pipe.	¼ wire to 2 pipe.	¼ wire to 2½ pipe.	¼ wire to 3½ pipe.	1 pipe to 5 pipe.
Each	2.00	2.00	2.25	3.00	4.00	6.00	12.00	18.00

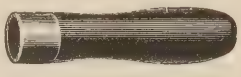
6-inch Wrench with screw driver attachment on end of handle finished, each 2.37
Nickel Plated, each 2.75



STILLSON JAW.



STILLSON FRAME.



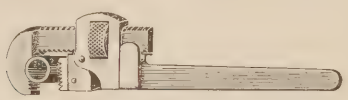
STILLSON HANDLE.



STILLSON NUT.

Repairs for Stillson Wrenches.

Size	6	8	10	14	18	24	36	48
Jaws, each	.67	.67	.75	1.00	1.33	2.00	4.00	6.00
Frames, "	.25	.25	.33	.45	.55	.65	.75	1.00
Wood Handles, "	.15	.15	.20	.25	.30	----	----	----
Steel Handles, "	.66	.66	.78	1.00	1.33	2.00	4.00	6.00
Nuts, "	.20	.20	.27	.35	.42	.50	.65	.80



TRIMO WRENCH.



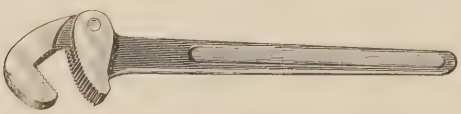
COE'S WRENCH.

Trimo Wrenches.

Length when open	6	8	10	14	18	24	36	48
Grips, inches	⅛ wire to ½ pipe.	⅛ wire to ¾ pipe.	⅛ wire to 1 pipe.	¼ wire to 1½ pipe.	¼ wire to 2 pipe.	¼ wire to 2½ pipe.	½ pipe to 3½ pipe.	1 pipe to 5 pipe.
Complete, each	2.00	2.00	2.25	3.00	4.00	6.00	12.00	18.00
Jaw, "	.67	.67	.75	1.00	1.33	2.00	4.00	6.00
Nut, "	.20	.20	.27	.35	.42	.50	.65	.80
Inserted Jaw, "	.25	.25	.33	.50	.55	.65	1.00	1.25
Frame, "	.25	.25	.33	.45	.55	.65	.75	1.00

Coe's Wrenches.

Size	4	6	8	10	12	15	18	21
Black, each	----	.75	.85	1.00	1.17	2.00	2.50	3.00
Bright, "	.85	.85	.95	1.17	1.35	2.17	2.75	3.25



JOHNSTON AUTOMATIC WRENCH.

Length when open	10	16	24
Grips, inches	⅛ to 1 pipe.	¼ to 1½ pipe.	½ to 2½ pipe.
Wrench Complete	2.25	3.00	6.00
Extra Swing Jaw	.75	1.00	2.00



ATLAS PIPE WRENCH.

Length when open	10	18	24	36
Grips, inches	⅛ wire to 1 pipe.	¼ to 2 pipe.	½ to 3 pipe.	1 to 4½ pipe.
Each	2.25	4.00	6.00	12.00

Wrenches.



VULCAN WRENCH WITH CABLE CHAIN.



VULCAN WRENCH WITH FLAT-LINK CHAIN.

Vulcan Patent Drop Forged Steel Chain Pipe Wrench.

For gripping, turning or holding pipe, bolts, bars, shafts, etc., from 1/8 to 18 inches diameter. Eight sizes. With either Cable or Flat-Link Chain.

To change the chain, unscrew one cap-screw, but remove neither jaw; slip out the internal pin on which the chain swings, thus releasing the chain; insert new chain, replace pin and cap-screw, screwing the latter firmly into place.

Vulcan Chain Pipe Wrenches.

Size	10	11	12	13	13½	14	15
Price, with Flat-Link Chain, each	2.50	3.50	5.00	7.00	9.00	11.00	18.00
" " Cable " "	2.25	3.25	4.50	6.25	7.75	9.50	16.00
Capacity, size pipe	1/8 to 3/4	1/8 to 1½	1/4 to 2½	3/4 to 4	1 to 6	1½ to 8	2 to 12
Length over all	13¾	20	27	37	44½	50½	64½
Weight	1¾	4¾	8¾	16	21	29	49
Extra Flat-Link Chains, each	.75	1.00	1.50	2.50	3.25	4.00	6.00
" Cable " "	.50	.75	1.00	1.75	2.00	2.50	4.00
" Jaws, pair	1.00	1.75	2.75	4.00	4.75	5.50	7.50
Length Flat-Link Chain	9½	13½	17½	22½	31	39	54½
" Cable "	9¾	14½	18	27	33½	42	57

Robbins' Chain Tongs.



No	2	3	4	5	6
Will take	1—2	1¼—5	2—7	2½—10	2½—12
Length	27 in.	3 ft.	4 ft.	5 ft.	----
Price	5.50	6.25	9.00	12.50	16.00

Falcon Pipe Wrench.

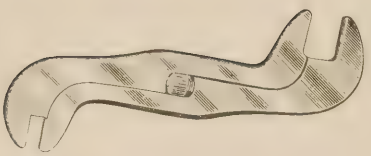


Patented December 3, 1901; April 22, 1902.

A one-hand tool, automatic, all drop-forged, simple, light, fit.

Size	10	14	18	24
Capacity, pipe	1/8—1	1/4—1½	1/4—2	1/4—2½
Price	2.25	3.00	4.00	6.00

Wrenches.



BAXTER ADJUSTABLE S WRENCH.



WESTCOTT ADJUSTABLE S PIPE WRENCH.



ALLIGATOR WRENCH.

Baxter's Adjustable S Wrench.

Length	4	6	8	10	12	15
Price	.50	.75	1.00	1.50	2.00	2.50

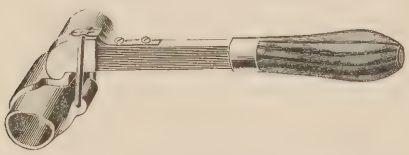
Westcott Adjustable S Pipe Wrench.

With Pipe Jaw.		With Smooth Jaw.	
8-inch takes pipe from ⅛ to ¾ inch	1.25	8-inch opens to 1 inch	.75
10 " " ⅛ " 1 "	1.50	10 " " 1⅜ "	1.00
12 " " ⅛ " 1¼ "	2.00	12 " " 1⅝ "	1.25
14 " " ⅛ " 1½ "	2.50	14 " " 2 "	1.75

Alligator Wrench.

Number	1	2	3	4	5	Twin.
Length, inches	5¾	10	16	22	27	10
Holds Pipe, inches	⅛ to ⅜	⅜ to ¾	½ to 1¼	1¼ to 2	2 to 3	⅛ to ¾
" Round Iron, inches	¼ to ¾	½ to 1	¾ to 1⅜	1½ to 2½	2¼ to 3½	¼ to 1
Price, per dozen	4.00	12.00	24.00	36.00	54.00	18.00

Hayden Pipe Wrench for Brass and Nickel Pipe.



HAYDEN PIPE WRENCH.
For Brass and Nickel Pipe.

No. 2. 10-inch Wrench Bar (only)	1.25
½, ¾ and 1 inch clamps for No. 2 Wrench, each	.75
No. 3. 18-inch Wrench Bar (only)	2.50
1¼, 1½ and 2 inch Clamps for No. 3 Wrench, each	1 50

Made from forged steel and can be ratcheted same as any wrench.

The Warnock Wrench.



Prices.

10-inch	Wrench, complete, each	1.50
12 "	Strap, ready for use, "	.25
18 "	Wrench, complete, "	2.50
24 "	Strap, ready for use, "	.35

This Wrench is designed for use on heavy and light tubing or any pipe or shafting having a finished surface which it is desirable not to mar or disfigure. It is indispensable in the engine room for removing piston rods or for any other smooth work.

For polished or plated surfaces it has no equal, as only a flexible linen band, resinous coated, comes in contact with the pipe, thus preserving the finish.

Is unsurpassed for its simplicity, quickness of adjustment, and strength of grip; yet will not crush the pipe. Can be used in close quarters. As a ratchet, the slightest grip of Wrench on pipe causes shackle to securely lock the strap; a reverse action releases it instantly, thus preventing lost motion.

This Wrench takes pipe ranging from ⅛ inch to 2 inches.

The 18-inch Wrench is especially designed for engine room work and for piping over 2 inches.

Wrenches for larger pipe made to order. Prices on application.

Straps are the best of linen, very closely woven, and will stand a strain of 1,500 lbs.

Drop Forged Engineers' Wrenches.



SINGLE HEAD WRENCH.



DOUBLE HEAD WRENCH.

All Wrenches are carried in stock in three conditions, viz.:

UNFINISHED WRENCHES, plain forgings, with openings milled.

SEMI-FINISHED WRENCHES, with openings milled and case hardened all over, otherwise plain.

FINISHED WRENCHES, openings milled, ground polished, case hardened all over, lacquered, heads bright, packed in separate envelopes.

When ordering please use numbers and state whether Unfinished, Semi-Finished or Finished Wrenches are desired.

Single Head Engineers' Wrenches.

No.	For U. S. Standard Nut. Size Bolt.	Opening Finished.	Unfinished.	Semi-Finished.	Finished.
00	1/8	5/16	.08	.12	.16
0	3/16	13/32	.09	.13	.18
1	1/4	1/2	.10	.15	.20
2	5/16	19/32	.12	.18	.24
3	3/8	11/16	.14	.21	.28
4	7/16	25/32	.17	.25	.34
5	1/2	7/8	.20	.30	.40
6	9/16	31/32	.25	.38	.50
7	5/8	1 1/16	.32	.48	.64
8	3/4	1 1/4	.40	.60	.80
9	7/8	1 7/16	.50	.75	1.00
10	1	1 5/8	.65	.98	1.30
11	1 1/8	1 13/16	.85	1.28	1.70
12	1 1/4	2	1.10	1.65	2.20
13	1 3/8	2 3/16	1.40	2.10	2.80
14	1 1/2	2 3/8	1.75	2.63	3.50
15	1 5/8	2 9/16	2.10	3.15	4.20
16	1 3/4	2 3/4	2.50	3.75	5.00
16 1/2	1 7/8	2 15/16	2.50	3.75	5.00
17	2	3 1/8	3.50	5.25	7.00
18	2 1/4	3 1/2	4.75	7.13	9.50
19	2 1/2	3 7/8	6.50	9.75	13.00
19 1/2	2 3/4	4 1/4	6.50	9.75	13.00
20	3	4 5/8	10.50	15.75	21.00
20 1/2	3 1/2	5 3/8	10.50	15.75	21.00

Double Head Engineers' Wrenches.

No.	For U. S. Standard Nuts. Size Bolts.	Openings Finished.	Unfinished.	Semi-Finished.	Finished.
21	1/8 and 3/16	5/16 and 13/32	.12	.18	.24
22	1/8 " 1/4	5/16 " 1/2	.14	.21	.28
23	3/16 " 1/4	13/32 " 1/2	.15	.23	.30
24	3/16 " 5/16	13/32 " 19/32	.17	.25	.34
25	1/4 " 5/16	1/2 " 19/32	.18	.27	.36
26	1/4 " 3/8	1/2 " 11/16	.20	.30	.40
27	5/16 " 3/8	19/32 " 11/16	.21	.32	.42
28	5/16 " 7/16	19/32 " 25/32	.33	.35	.46
29	3/8 " 7/16	11/16 " 25/32	.25	.38	.50
30	3/8 " 1/2	11/16 " 7/8	.28	.42	.56
31	7/16 " 1/2	25/32 " 7/8	.30	.45	.60
32	7/16 " 9/16	25/32 " 31/32	.34	.51	.68
33	1/2 " 9/16	7/8 " 31/32	.36	.54	.72
34	1/2 " 5/8	7/8 " 1 1/16	.41	.61	.82
35	9/16 " 5/8	31/32 " 1 1/16	.43	.65	.86
36	9/16 " 3/4	31/32 " 1 1/4	.50	.75	1.00
37	5/8 " 3/4	1 1/16 " 1 1/4	.53	.80	1.06
38	5/8 " 7/8	1 1/16 " 1 7/16	.62	.93	1.24
39	3/4 " 7/8	1 1/4 " 1 7/16	.65	.98	1.30
40	3/4 " 1	1 1/4 " 1 5/8	.78	1.17	1.56
41	7/8 " 1	1 7/16 " 1 5/8	.82	1.23	1.64
42	7/8 " 1 1/8	1 7/16 " 1 13/16	1.00	1.50	2.00
43	1 " 1 1/8	1 5/8 " 1 13/16	1.08	1.62	2.16
44	1 " 1 1/4	1 5/8 " 2	1.27	1.91	2.54
45	1 1/8 " 1 1/4	1 13/16 " 2	1.35	2.03	2.70
46	1 1/8 " 1 3/8	1 13/16 " 2 3/16	1.65	2.48	3.30
47	1 1/4 " 1 3/8	2 " 2 3/16	1.75	2.63	3.50
48	1 1/4 " 1 1/2	2 " 2 3/8	2.10	3.15	4.20
49	1 3/8 " 1 1/2	2 3/16 " 2 3/8	2.25	3.38	4.50

Larger sizes and other patterns kept in stock.



Drop-Forged Wrenches.



S Wrenches.

S WRENCH. CONSTRUCTION WRENCH.

For conditions of finish see previous page.

No.	For U. S. Standard Nuts. Size Bolts.	For Set-Screws. Sizes.	For Square Hd. Cap-Screws. Diam. Screws.	For Hex. Hd. Cap Screws. Diam. Screws.	Openings. Finished.	Extreme Length.	Unfinished.	Semi-Finished.	Finished.
235		1/4 and 5/16			1/4 and 5/16	3 5/8	.10	.15	.20
236		1/4 " 3/8			1/4 " 3/8		.10	.15	.20
237		1/4 " 7/16			1/4 " 7/16		.10	.15	.20
238		5/16 " 3/8			5/16 " 3/8		.10	.15	.20
239	1/8 and 3/16				5/16 " 13/32		.10	.15	.20
240		5/16 and 7/16			5/16 " 7/16	4 7/8	.12	.18	.24
241	1/8 and 1/4				5/16 " 1/2		.12	.18	.24
242		3/8 and 7/16	1/4 and 5/16	3/16 and 1/4	3/8 " 7/16		.12	.18	.24
243	3/16 and 1/4				13/32 " 1/2		.12	.18	.24
244	5/16 " 5/16				13/32 " 19/32		.12	.18	.24
245	1/4 " 5/16				1/2 " 19/32		.12	.18	.24
246		3/8 and 1/2	1/4 and 3/8	3/16 and 5/16	3/8 " 1/2	5 3/4	.15	.22	.30
247		3/8 " 9/16	1/4 " 7/16	3/16 " 3/8	3/8 " 9/16		.15	.22	.30
248		7/16 " 1/2	5/16 " 3/8	1/4 " 5/16	7/16 " 1/2		.15	.22	.30
249		7/16 " 9/16	5/16 " 7/16	1/4 " 3/8	7/16 " 9/16		.15	.22	.30
250	1/4 and 3/8				1/2 " 11/16		.15	.22	.30
251	1/2 and 9/16	3/8 and 7/16	5/16 and 3/8	1/2 " 9/16	6 1/2	.19	.28	.38
252	1/2 " 5/8	3/8 " 1/2	5/16 " 7/16	1/2 " 5/8		.19	.28	.38
253	5/16 and 3/8				19/32 " 11/16		.19	.28	.38
254	5/16 " 7/16				19/32 " 25/32		.19	.28	.38
255		3/8 and 9/16			1/2 " 11/16	7 1/4	.24	.36	.48
256		1/2 and 3/4		5/16 and 1/2	1/2 " 3/4		.24	.36	.48
257		9/16 " 5/8	7/16 and 1/2	3/8 " 7/16	9/16 " 5/8		.24	.36	.48
258			7/16 " 9/16		9/16 " 11/16		.24	.36	.48
259		9/16 and 3/4	7/16 " 5/8	3/8 and 1/2	9/16 " 3/4		.24	.36	.48
260			1/2 " 9/16		5/8 " 11/16		.24	.36	.48
261	3/8 and 7/16				11/16 " 25/32		.24	.36	.48
262	3/8 " 1/2				11/16 " 7/8		.24	.36	.48
263		5/8 and 3/4	1/2 and 5/8	7/16 and 1/2	5/8 " 3/4	8	.30	.45	.60
264				7/16 " 9/16	5/8 " 13/16		.30	.45	.60
265		5/8 and 7/8	1/2 and 3/4		5/8 " 7/8		.30	.45	.60
266			9/16 " 5/8		11/16 " 3/4		.30	.45	.60
267			9/16 " 3/4		11/16 " 7/8		.30	.45	.60
268				1/2 and 9/16	3/4 " 13/16		.30	.45	.60
269		3/4 and 7/8	5/8 and 3/4	1/2 " 5/8	3/4 " 7/8		.30	.45	.60
270	7/16 and 1/2				25/32 " 7/8		.30	.45	.60
271	7/16 " 9/16				25/32 " 31/32		.30	.45	.60
272	1/2 " 9/16				7/8 " 31/32		.30	.45	.60
273	1/2 " 5/8				7/8 " 1 1/16		.30	.45	.60
274		3/4 and 1		1/2 and 3/4	3/4 " 1	10	.38	.57	.76
275				9/16 " 5/8	13/16 " 7/8		.38	.57	.76
276				9/16 " 3/4	13/16 " 1.		.38	.57	.76
277		7/8 and 1		5/8 " 3/4	7/8 " 1		.38	.57	.76
278	9/16 and 5/8				31/32 " 1 1/16		.38	.57	.76
279	9/16 " 3/4				31/32 " 1 1/4		.38	.57	.76
280	5/8 " 3/4				1 1/16 " 1 1/4		.38	.57	.76
281		7/8 and 1 1/8	3/4 and 7/8	5/8 and 7/8	7/8 " 1 1/8	11 1/2	.49	.74	.98
282		1 " 1 1/8		3/4 " 7/8	1 " 1 1/8		.49	.74	.98
283		1 " 1 1/4		3/4 " 1	1 " 1 1/4		.49	.74	.98
284		1 1/8 " 1 1/4	7/8 and 1	7/8 " 1	1 1/8 " 1 1/4		.49	.74	.98
285	5/8 and 7/8				1 1/16 " 1 1/16		.49	.74	.98
286	3/4 " 7/8				1 1/4 " 1 7/16		.49	.74	.98
288			7/8 and 1 1/8	7/8 and 1 1/8	1 1/8 " 1 3/8	14 1/2	.65	.98	1.30
289			7/8 " 1 1/4	7/8 " 1 1/4	1 1/8 " 1 1/2		.65	.98	1.30
290			1 " 1 1/8	1 " 1 1/8	1 1/4 " 1 3/8		.65	.98	1.30
291			1 " 1 1/4	1 " 1 1/4	1 1/4 " 1 1/2		.65	.98	1.30
292			1 1/8 " 1 1/4	1 1/8 " 1 1/4	1 3/8 " 1 1/2		.65	.98	1.30
293	3/4 and 1				1 1/4 " 1 5/8		.65	.98	1.30
294	7/8 " 1				1 7/16 " 1 5/8		.65	.98	1.30
295	7/8 " 1 1/8				1 7/16 " 1 13/16		.65	.98	1.30

Construction Wrenches.

No.	For U. S. Standard Nuts. Size Bolt.	Opening. Finished.	Extreme Length.	Unfinished.	Semi-Finished.	Finished.
223	3/8	1/16	9	.20	.30	.40
225	1/2	7/8	11 1/2	.32	.48	.64
226	9/16	31/32	12 1/2	.40	.60	.80
227	5/8	1 1/16	14	.50	.75	1.00

No.	For U. S Standard Nuts. Size Bolt.	Opening. Finished.	Extreme Length.	Unfinished.	Semi-Finished.	Finished.
228	3/4	1 1/4	16	.65	.97	1.30
229	7/8	1 7/16	17 1/2	.85	1.28	1.70
230	1	1 5/8	19	1.10	1.65	2.20

Pipe Vises.



NASON PATENT PIPE VISE.

No	1	2	3
To take	⅛ to 1¼	¼ to 2	¼ to 3
Price	15.00	18.00	30.00



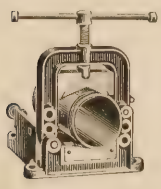
IMPROVED SWIVEL PIPE VISE.

No	1	2	3
To take	⅛ to 2	⅛ to 3	¼ to 4
Price	14.00	18.00	30.00



ANGLE PIPE VISE.

No	1	2	3
To take	⅛ to 2	¼ to 3	½ to 4
Price	11.00	17.00	28.00



MALLEABLE HINGE PIPE VISE.

No.	To Take	Price.
1	⅛ to 2	10.00
2	¼ to 3	13.00
3	½ to 4	24.00
4	2 to 6	30.00
5	2½ to 8	45.00



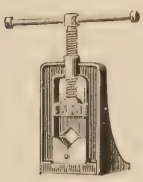
HINGED PIPE VISE.

No.	To Take	Weight.	Price.
1	⅛ to 2½	16 lbs.	10.00
2	½ to 4	38 lbs.	20.00



ARMSTRONG HINGED PIPE VISE.

No	1	2
To take	0 to 2½	½ to 4½
Price	10.00	20.00



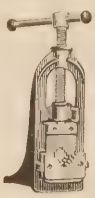
MALLEABLE IRON PIPE VISE.

No	1	2
To take	⅛ to 2	¼ to 3
Price	8.00	12.00



TRUSTY PIPE VISE.

No	1
To take	⅛ to 2
Price	8.00



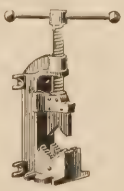
SEVEN-POUND STEEL VISE.

No	1
To take	⅛ to 2
Price	4.50



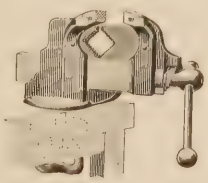
KLINGFAST PIPE VISE.

No	1	2
To take	⅛ to 1½	⅛ to 2
Price	3.00	5.00



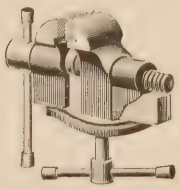
SIDE ISSUE MALLEABLE PIPE VISE.

No	1	2
To take	⅛ to 2	2 to 6
Price	6.00	27.00



COMBINATION PIPE AND BENCH VISE.

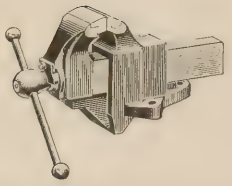
No	1	2
To take	⅛ to 2	½ to 3
Price	16.00	20.00



WALWORTH PIPE VISE.

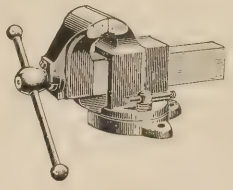
No	1
To take	⅛ to 6
Size of Jaw	5
Price	18.00

Bench and Blacksmith Vises.



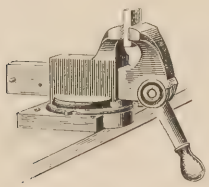
PARKER PATENT PARALLEL VISE.

No	3/0x	1x	2x	3x	4x	5x
Length of Jaw	3¼	3¾	4¼	4¾	5½	6¼
Vise Opens	4¼	5½	6½	8¼	9½	10½
Weight, lbs	28	45	58	74	104	134
Price	6.25	7.00	9.00	11.75	16.25	24.00



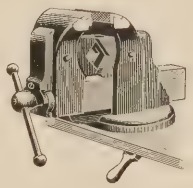
PARKER PATENT PARALLEL SWIVEL VISE.

No	21x	22x	23x	24x	25x	26x
Length of Jaw	3¼	3¾	4¼	4¾	5½	6¼
Vise Opens	4¼	5½	6½	8¼	9½	10½
Weight, lbs	32	50	65	87	130	160
Price	7.00	8.75	11.00	14.50	20.50	30.00



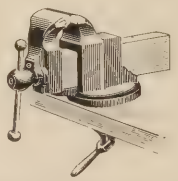
HALL'S PATENT SUDDEN GRIP VISE.

No	90	92	94
Length of Jaw	2	3	4
Price	5.00	8.50	12.50



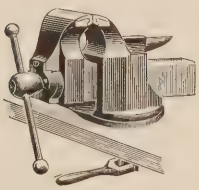
PARKER PATENT COMBINATION VISE.

No.	Length of Jaw.	To hold Pipe, Ins. and Under.	Price.
87	3⅝	2	16.00
88	4⅛	3	20.00
288½	4¾	4	28.00
289½	5⅜	6	35.00



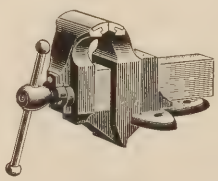
PARKER SWIVEL FILER'S VISE.

No	44
Length of Jaw	4
Weight, lbs	37
Price	8.75



PARKER PATENT PARALLEL SWIVEL VISE WITH ANVIL.

No	19	20	21	22
Length of Jaw	2	2¼	3⅛	3⅝
Weight, lbs	8	8½	23	35
Price	4.00	5.00	7.00	8.75



PARKER PATENT FILER'S VISE.

No	42	42½
Length of Jaw	4	3¼
Weight, lbs	33	30
Price	7.25	6.75



SAW FILER'S VISE.

No	43
Length of Jaw	9 to 14
Weight, lbs	23
Price	3.50

Blacksmith Vise.



SOLID BOX WROUGHT STEEL BLACKSMITH VISE.

No	25	30	35	40	45	50	55	60	70	80
Size of Jaw	3¼	3⅜	3¾	4	4¼	4½	4¾	5	5¼	5½
Price	12.00	11.00	10.00	10.50	11.00	11.50	12.00	13.00	15.00	17.50

No	90	100	120	140	160	180	200
Size of Jaw	5¾	6	6½	7	7¼	7½	8
Price	20.00	22.00	26.00	33.00	41.50	47.00	56.00

Horseshoers' Vise.

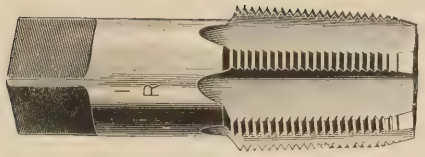
No	60	65	70
Price, without Anvil	18.00	19.50	21.00
" with Anvil	1.00 Net Extra.		



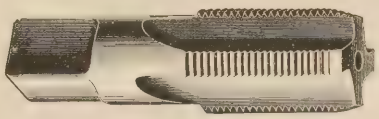
SOLID BOX WROUGHT STEEL HORSE-SHOER'S VISE.

Size Nos. denote the approximate weight of Blacksmith and Horseshoers' Vises.

Taps, Reamers and Drills.

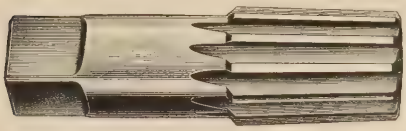


TAPER PIPE TAP.

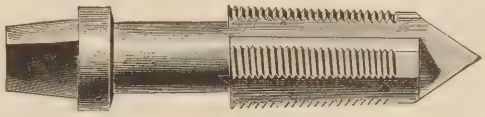


STRAIGHT PIPE TAP.

Diameter	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Price	1.12	1.25	1.50	1.87	2.50	3.12	3.75	4.62	6.25	10.50	15.00	42.00	50.00
Threads per inch	27	18	18	14	14	11 1/2	11 1/2	11 1/2	11 1/2	8	8	----	----



PIPE REAMER.



HUMPHREY COMBINED DRILL, REAMER AND TAP.

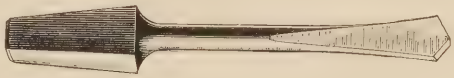
Pipe Reamers.

Diameter	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price	1.12	1.25	1.50	1.87	2.50	3.12	3.75	4.62	6.25	10.50	15.00

Humphrey Combined Drill, Reamer and Tap.

Diameter	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Price	2.50	2.50	3.00	4.50	6.00	7.25	8.50	10.75

Flat and Pipe Drills.



Flat Drills.

Sizes, 6 in. long	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 3/4	2	2 1/2
Each	.40	.40	.40	.40	.40	.45	.45	.45	.50	.55	.60	.65	.75	1.00	1.00

Pipe Drills.

Sizes	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	.91	.91	.95	.98	1.04	1.14	1.23	1.35	1.56	1.80	3.25

Machinists' Hand Taps.

V, U. S. or Whitworth Shape or Thread.

Unless advised to the contrary, we fill orders with V Threads

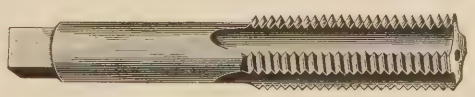
Size.	Whole Length.	Length Thread.	No. V Threads to Inch.	Price, Each.	Price per Set of 3 Taps.
1/4	2 1/16	1 1/8	16, 18, 20	.45	1.35
5/16	2 3/8	1 1/4	16, 18	.50	1.50
3/8	3 1/8	1 1/4	14, 16, 18	.55	1.65
7/16	3 5/8	1 3/8	12, 14, 16	.60	1.80
1/2	4 1/8	1 3/4	12, 13, 14	.70	2.10
9/16	4 1/2	1 7/8	12, 14	.80	2.40
5/8	4 3/4	2	10, 11, 12	.90	2.70
11/16	5 1/8	2 1/8	11, 12	1.05	3.15
3/4	5 5/8	2 1/4	10, 11, 12	1.20	3.60
13/16	5 13/16	2 3/8	10	1.40	4.20
7/8	6	2 1/2	9, 10	1.60	4.80
15/16	6 1/8	2 5/8	9,	1.80	5.40
1	6 1/2	2 7/8	8,	2.00	6.00
1 1/8	6 5/8	3	7, 8	2.25	6.75
1 1/4	6 7/8	3 1/4	7,	2.60	7.80
1 3/8	7 1/4	3 1/2	6,	3.00	9.00
1 1/2	7 5/8	3 3/4	6,	3.50	10.50
1 5/8	8 1/8	3 15/16	5, 5 1/2	4.20	12.60
1 3/4	8 11/16	4 1/8	5	5.00	15.00
1 7/8	9 3/16	4 1/4	4 1/2, 5	5.80	17.40
2	9 3/4	4 1/2	4 1/2	6.70	20.10



TAPER TAP.



PLUG TAP.



BOTTOMING TAP.

Left hand Taps, regular sizes as above, same list prices as right hand.

Steel Sockets and Reamers.



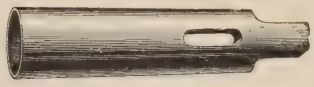
SOCKET FOR TAPER SHANK DRILLS.
No. 100, or Rough.

No. 1.	Holds $\frac{1}{4}$ to $\frac{9}{16}$ in. inclusive	1.20
" 2.	" $\frac{19}{32}$ to $\frac{29}{32}$ " "	1.80
" 3.	" $\frac{15}{16}$ to $1\frac{1}{4}$ " "	2.50
" 4.	" $1\frac{9}{32}$ to 2 " "	4.00
" 5.	" $2\frac{1}{16}$ to 3 " "	7.50
" 6.	" $3\frac{1}{16}$ to 4 " "	14.00



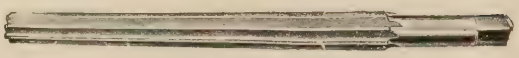
No. 102, or Fitted.

No. 1.	With Shank fitted to No. 2 or 3 Socket	2.00
" 2.	" " " " 3 "	2.50
" 3.	" " " " 4 "	3.20
" 4.	" " " " 5 "	4.80
" 5.	" " " " 6 "	12.00



No. 104, or Sleeve.

No. 104, or Sleeve.	No. 1.	Fitted to No. 2 or 3 Socket		1.80
" "	" 2.	" " 3	"	2.04
" "	" 3.	" " 4	"	3.00
" "	" 4.	" " 5	"	4.40



STANDARD TAPER-PIN REAMERS.
No. 137. Taper $\frac{1}{4}$ inch per foot.

Size No.	Price Each.	Diameter at Small End. Inches.	Length of Flute. Inches.	Total Length. Inches.
0	1.00	0.125	$1\frac{1}{2}$	$2\frac{1}{4}$
1	1.00	0.146	$1\frac{3}{4}$	$2\frac{1}{2}$
2	1.25	0.162	2	3
3	1.50	0.183	$2\frac{1}{4}$	$3\frac{1}{2}$
4	1.75	0.208	$2\frac{1}{2}$	4
5	2.00	0.240	3	$4\frac{1}{2}$
6	2.25	0.279	$3\frac{5}{8}$	5
7	2.50	0.331	$4\frac{1}{2}$	6
8	3.00	0.398	$5\frac{1}{4}$	$6\frac{3}{4}$
9	3.50	0.482	$6\frac{1}{8}$	8
10	4.00	0.581	7	9
11	4.75	0.706	$8\frac{1}{4}$	$11\frac{1}{4}$
12	5.50	0.842	10	$13\frac{3}{8}$
13	6.50	1.009	12	16

These Reamers are all of the same taper and the point of each Reamer will enter the hole reamed by the next size smaller.

Taper Shank Reamers.



NO. 128 B.—TAPER SHANK REAMER.

Diameter.	Price Each.	Length in Inches.	Length of Flute in Inches.	Socket for Morse Taper.
$\frac{1}{4}$	1.50	$5\frac{3}{16}$	2	No. 1, 1.20
$\frac{9}{32}$	1.55	$5\frac{3}{16}$	2	
$\frac{5}{16}$	1.60	$5\frac{1}{2}$	$2\frac{1}{4}$	
$\frac{11}{32}$	1.65	$5\frac{1}{2}$	$2\frac{1}{4}$	
$\frac{3}{8}$	1.70	$5\frac{3}{16}$	$2\frac{1}{2}$	
$\frac{13}{32}$	1.80	$5\frac{3}{16}$	$2\frac{1}{2}$	
$\frac{7}{16}$	1.85	$6\frac{1}{8}$	$2\frac{3}{4}$	
$\frac{15}{32}$	1.95	$6\frac{1}{8}$	$2\frac{3}{4}$	
$\frac{1}{2}$	2.00	$6\frac{7}{16}$	3	
$\frac{17}{32}$	2.10	$6\frac{7}{16}$	3	
$\frac{9}{16}$	2.15	$6\frac{3}{4}$	$3\frac{1}{4}$	
$\frac{19}{32}$	2.25	$6\frac{3}{4}$	$3\frac{1}{4}$	
$\frac{5}{8}$	2.30	$7\frac{9}{16}$	$3\frac{1}{2}$	
$\frac{21}{32}$	2.40	$7\frac{9}{16}$	$3\frac{1}{2}$	
$\frac{11}{16}$	2.50	8	$3\frac{7}{8}$	No. 2, 1.80
$\frac{23}{32}$	2.60	8	$3\frac{7}{8}$	
$\frac{3}{4}$	2.70	$8\frac{3}{8}$	$4\frac{3}{16}$	
$\frac{25}{32}$	2.80	$8\frac{3}{8}$	$4\frac{3}{16}$	
$\frac{13}{16}$	2.90	$8\frac{13}{16}$	$4\frac{9}{16}$	
$\frac{27}{32}$	3.05	$8\frac{13}{16}$	$4\frac{9}{16}$	
$\frac{7}{8}$	3.20	$9\frac{3}{16}$	$4\frac{7}{8}$	
$\frac{29}{32}$	3.35	$9\frac{3}{16}$	$4\frac{7}{8}$	
$\frac{15}{16}$	3.50	10	$5\frac{1}{8}$	
$\frac{31}{32}$	3.65	10	$5\frac{1}{8}$	
1	3.80	$10\frac{3}{8}$	$5\frac{7}{16}$	No. 3, 2.50
$1\frac{1}{32}$	3.95	$10\frac{3}{8}$	$5\frac{7}{16}$	
$1\frac{1}{16}$	4.10	$10\frac{5}{8}$	$5\frac{5}{8}$	
$1\frac{3}{32}$	4.25	$10\frac{5}{8}$	$5\frac{5}{8}$	
$1\frac{1}{8}$	4.40	$10\frac{7}{8}$	$5\frac{13}{16}$	
$1\frac{5}{32}$	4.55	$10\frac{7}{8}$	$5\frac{13}{16}$	
$1\frac{3}{16}$	4.70	$11\frac{1}{8}$	6	
$1\frac{7}{32}$	4.85	$11\frac{1}{8}$	6	
$1\frac{1}{4}$	5.00	$11\frac{5}{8}$	$6\frac{1}{8}$	No. 4, 4.00
$1\frac{9}{32}$	5.15	$11\frac{5}{8}$	$6\frac{1}{8}$	
$1\frac{5}{16}$	5.30	$12\frac{1}{16}$	$6\frac{1}{4}$	
$1\frac{11}{32}$	5.50	$12\frac{1}{16}$	$6\frac{1}{4}$	
$1\frac{3}{8}$	5.70	$12\frac{3}{16}$	$6\frac{5}{16}$	

Diameter.	Price Each.	Length in Inches.	Length of Flute in Inches.	Socket for Morse Taper.
$1\frac{13}{32}$	5.90	$12\frac{3}{16}$	$6\frac{5}{16}$	No. 4, 4.00
$1\frac{7}{16}$	6.10	13	$6\frac{7}{16}$	
$1\frac{15}{32}$	6.30	13	$6\frac{7}{16}$	
$1\frac{1}{2}$	6.50	$13\frac{1}{8}$	$6\frac{1}{2}$	
$1\frac{17}{32}$	6.70	$13\frac{1}{8}$	$6\frac{1}{2}$	
$1\frac{9}{16}$	6.90	$13\frac{1}{8}$	$6\frac{1}{2}$	
$1\frac{19}{32}$	7.10	$13\frac{1}{8}$	$6\frac{1}{2}$	
$1\frac{5}{8}$	7.30	$13\frac{1}{8}$	$6\frac{1}{2}$	
$1\frac{21}{32}$	7.50	$13\frac{1}{8}$	$6\frac{1}{2}$	
$1\frac{11}{16}$	7.70	$14\frac{11}{16}$	$6\frac{3}{4}$	
$1\frac{23}{32}$	7.85	$14\frac{11}{16}$	$6\frac{3}{4}$	
$1\frac{3}{4}$	8.00	$14\frac{11}{16}$	$6\frac{3}{4}$	
$1\frac{25}{32}$	8.20	$14\frac{11}{16}$	$6\frac{3}{4}$	
$1\frac{13}{16}$	8.40	$14\frac{11}{16}$	$6\frac{3}{4}$	
$1\frac{27}{32}$	8.60	$14\frac{11}{16}$	$6\frac{3}{4}$	
$1\frac{7}{8}$	8.80	15	7	No. 5, 7.50
$1\frac{29}{32}$	9.00	15	7	
$1\frac{15}{16}$	9.20	15	7	
$1\frac{31}{32}$	9.40	15	7	
2	9.60	15	7	
$2\frac{1}{16}$	10.00	$15\frac{1}{2}$	$7\frac{1}{4}$	
$2\frac{1}{8}$	10.40	$15\frac{1}{2}$	$7\frac{1}{4}$	
$2\frac{3}{16}$	10.80	$15\frac{1}{2}$	$7\frac{1}{4}$	
$2\frac{1}{4}$	11.30	$15\frac{1}{2}$	$7\frac{1}{4}$	
$2\frac{5}{16}$	11.80	16	$7\frac{1}{2}$	
$2\frac{3}{8}$	12.30	16	$7\frac{1}{2}$	
$2\frac{7}{16}$	12.80	16	$7\frac{1}{2}$	
$2\frac{1}{2}$	13.40	16	$7\frac{1}{2}$	
$2\frac{9}{16}$	14.00	$16\frac{1}{2}$	$7\frac{3}{4}$	
$2\frac{5}{8}$	14.60	$16\frac{1}{2}$	$7\frac{3}{4}$	
$2\frac{11}{16}$	15.40	$16\frac{1}{2}$	$7\frac{3}{4}$	
$2\frac{3}{4}$	16.20	$16\frac{1}{2}$	$7\frac{3}{4}$	
$2\frac{13}{16}$	17.00	17	8	
$2\frac{7}{8}$	17.80	17	8	
$2\frac{15}{16}$	18.60	17	8	
3	19.40	17	8	

Always give List Number when Ordering.

Machine Taps and Hand Reamers.



NO. 124.—MACHINE OR NUT TAPS.

Diameter.	Each.	Length.	Length of Thread.	No. Threads to Inch.	Diameter.	Each.	Length.	Length of Thread.	No. Threads to Inch.
1/4	.60	5	1 3/4	18 and 20	1 7/8	6.80	17	8 1/4	4 1/2 and 5
5/16	.70	5 1/4	2	16 and 18	2	7.70	17 3/4	8 3/4	4 1/2
3/8	.80	6 1/2	2 1/4	14 and 16	2 1/8	9.00	18	9	4 1/2
7/16	.90	7 1/4	2 1/2	12, 14 and 16	2 1/4	10.20	18 3/4	9	4 1/2
1/2	1.00	8	2 3/4	12, 13	2 3/8	11.50	18 1/2	9 1/4	4
9/16	1.15	8 3/4	3	12	2 1/2	12.50	18 3/4	9 1/4	4
5/8	1.30	9 1/2	3 1/4	10, 11	2 5/8	14.00	19	9 1/2	4
11/16	1.45	10 1/4	3 3/4	11	2 3/4	15.00	19 1/4	9 1/2	4
3/4	1.60	10 1/4	3 3/4	10	2 7/8	16.50	19 1/2	9 3/4	4
13/16	1.80	11	4 1/4	10	3	18.00	19 3/4	9 3/4	3 1/2
7/8	2.10	11	4 1/4	9 and 10	3 1/8	20.00	19 3/4	9 3/4	3 1/2
15/16	2.40	11 3/4	4 3/4	9	3 1/4	21.50	20	10	3 1/2
1	2.80	11 3/4	4 3/4	8	3 3/8	23.50	20	10	3 1/2
1 1/8	3.20	12 1/2	5 1/4	7 and 8	3 1/2	25.00	20 1/4	10	3 1/4
1 1/4	3.70	13 1/4	5 3/4	7 and 8	3 5/8	27.50	20 1/4	10	3 1/4
1 3/8	4.20	14	6 1/4	6	3 3/4	29.50	20 1/2	10 1/4	3
1 1/2	4.70	14 3/4	6 3/4	6	3 7/8	31.50	20 1/2	10 1/4	3
1 5/8	5.30	15 1/2	7 1/4	5 and 5 1/2	4	33.50	20 3/4	10 1/4	3
1 3/4	6.00	16 1/4	7 3/4	5					

In ordering please state whether U. S. Standard or V Thread is required, and if exact size or 1/32 over size. Master Taps furnished at 25 per cent. advance on above list.



NO. 128 A.—HAND REAMERS.
Eccentric Flutes.



NO. 128.—SELF-FEEDING REAMER.
Eccentric Flutes.

Diam.	Price, Each.	Full Length.	Length of Flutes.	Diam.	Price, Each.	Full Length.	Length of Flutes	Diam.	Price, Each.	Full Length.	Length of Flutes
1/8	1.00	3	1 1/2	1 5/16	3.40	10 1/4	5 1/8	1 3/4	8.00	13 1/2	6 3/4
5/32	1.10	3 1/4	1 5/8	1 31/32	3.55	10 11/16	5 11/32	1 25/32	8.20	13 1/2	6 3/4
3/16	1.20	3 1/2	1 3/4	1	3.70	10 7/8	5 7/16	1 13/16	8.40	13 1/2	6 3/4
7/32	1.30	3 3/4	1 7/8	1 1/32	3.85	11 1/16	5 17/32	1 27/32	8.60	13 1/2	6 3/4
1/4	1.40	4	2	1 1/16	4.00	11 1/4	5 5/8	1 7/8	8.80	14	7
9/32	1.45	4 1/4	2 1/8	1 3/32	4.15	11 7/16	5 23/32	1 29/32	9.00	14	7
5/16	1.50	4 1/2	2 1/4	1 1/8	4.30	11 5/8	5 13/16	1 15/16	9.20	14	7
11/32	1.55	4 3/4	2 3/8	1 5/32	4.45	11 13/16	5 29/32	1 31/32	9.40	14	7
3/8	1.60	5	2 1/2	1 3/16	4.60	12	6	2	9.60	14	7
13/32	1.70	5 1/4	2 5/8	1 7/32	4.75	12 1/8	6 1/16	2 1/16	10.00	14 1/2	7 1/4
7/16	1.75	5 1/2	2 3/4	1 1/4	4.90	12 1/4	6 1/8	2 1/8	10.40	14 1/2	7 1/4
15/32	1.85	5 3/4	2 7/8	1 9/32	5.05	12 11/32	6 11/64	2 3/16	10.80	15	7 1/2
1/2	1.90	6	3	1 5/16	5.20	12 7/16	6 7/32	2 1/4	11.30	15	7 1/2
17/32	1.95	6 1/4	3 1/16	1 11/32	5.40	12 17/32	6 17/64	2 5/16	11.80	15	7 1/2
9/16	2.00	6 1/2	3 1/4	1 3/8	5.60	12 5/8	6 5/16	2 3/8	12.30	15	7 1/2
19/32	2.10	6 3/4	3 3/8	1 13/32	5.80	12 23/32	6 23/64	2 7/16	12.80	15 1/2	7 3/4
5/8	2.20	7	3 1/2	1 7/16	6.00	12 13/16	6 13/32	2 1/2	13.40	15 1/2	7 3/4
21/32	2.30	7 1/32	3 15/32	1 15/32	6.20	12 29/32	6 29/64	2 9/16	14.00	15 1/2	7 3/4
11/16	2.40	7 1/16	3 17/32	1 1/2	6.40	13	6 1/2	2 5/8	14.60	16	8
23/32	2.50	8 1/8	4 1/16	1 17/32	6.60	13	6 1/2	2 11/16	15.40	16	8
3/4	2.60	8 3/8	4 3/16	1 9/16	6.80	13	6 1/2	2 3/4	16.20	16	8
25/32	2.70	8 23/32	4 23/64	1 19/32	7.00	13	6 1/2	2 13/16	17.00	16 1/2	8 1/4
13/16	2.80	9 1/16	4 17/32	1 5/8	7.20	13	6 1/2	2 7/8	17.80	16 1/2	8 1/4
27/32	2.95	9 3/8	4 11/16	1 21/32	7.40	13 1/2	6 3/4	2 15/16	18.60	16 1/2	8 1/4
7/8	3.10	9 11/16	4 27/32	1 11/16	7.60	13 1/2	6 3/4	3	19.40	16 1/2	8 1/4
29/32	3.25	10 3/32	5 3/64	1 23/32	7.80	13 1/2	6 3/4				

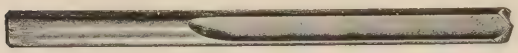
Reamers from 1/4 to 1 1/4 inch, and 1/4 to 2 inch by 16ths, furnished in cases when desired.
Always give List Number when Ordering.

Straight Shank Twist and Straight Fluted Drills.



No. 108.

JOBBERS STRAIGHT SHANK TWIST DRILL.



No. 145.

STRAIGHT SHANK STRAIGHT FLUTED DRILL.

Diameter.	Price per Dozen.	Price Each.	Length in Inches.	Diameter.	Price per Dozen.	Price Each.	Length in Inches.
1/16	1.00	.09	2 1/2	13/64	3.90	.35	4 3/8
5/64	1.10	.10	2 5/8	7/16	4.20	.37	4 1/2
3/32	1.20	.11	2 3/4	29/64	4.50	.40	4 5/8
7/64	1.30	.12	2 7/8	15/32	4.80	.42	4 3/4
1/8	1.45	.13	3	31/64	5.10	.45	4 7/8
9/64	1.60	.15	3 1/8	1/2	5.40	.48	5
5/32	1.80	.16	3 1/4	33/64	5.70	.50	5 1/8
11/64	2.00	.18	3 3/8	17/32	6.00	.53	5 1/4
3/16	2.20	.20	3 1/2	35/64	6.40	.55	5 3/8
13/64	2.40	.21	3 5/8	9/16	6.80	.59	5 1/2
7/32	2.65	.23	3 3/4	37/64	7.20	.63	5 5/8
15/64	2.90	.26	3 7/8	19/32	7.50	.65	5 3/4
1/4	3.15	.28	4	39/64	7.75	.67	5 7/8
17/64	3.40	.30	4 1/8	1/2	8.00	.70	6
9/32	3.65	.32	4 1/4				

Straight Shank Twist Drills.



No. 110.

STRAIGHT SHANK TWIST DRILL.

Same Length as Taper Shanks.

Diameter.	Price, Each.	Length.	Diameter.	Price, Each.	Length.	Diameter.	Price, Each.	Length.
1/16	.35	3 5/8	13/64	2.15	10	1 9/16	6.60	15 1/4
5/64	.35	4 3/8	27/64	2.30	10 1/4	1 19/32	6.90	15 3/8
3/32	.45	5 1/8	7/16	2.45	10 1/2	1 5/8	7.20	15 1/2
7/64	.45	5 3/8	29/64	2.60	10 5/8	1 21/32	7.50	15 5/8
1/8	.50	5 5/8	15/32	2.75	10 3/4	1 11/16	7.80	15 3/4
9/64	.55	5 7/8	31/64	2.90	10 7/8	1 23/32	8.10	15 7/8
5/32	.60	6 1/8	1	3.00	11	1 3/4	8.40	16
11/64	.65	6 1/4	1 1/32	3.20	11 1/8	1 25/32	8.60	16 1/8
3/16	.70	6 3/8	1 1/16	3.40	11 1/4	1 13/16	8.80	16 1/4
13/64	.75	6 1/2	1 3/32	3.60	11 1/2	1 27/32	9.00	16 3/8
7/32	.80	6 3/4	1 1/8	3.80	11 3/4	1 7/8	9.20	16 1/2
15/64	.85	7	1 5/32	4.00	11 7/8	1 29/32	9.35	16 1/2
1/4	.90	7 1/4	1 3/16	4.20	12	1 15/16	9.50	16 1/2
17/64	.95	7 1/2	1 7/32	4.40	12 1/8	1 31/32	9.65	16 1/2
9/32	1.00	7 3/4	1 1/4	4.50	12 1/2	2	9.80	16 1/2
17/64	1.10	8	1 9/32	4.65	14 1/8	2 1/32	10.20	16 1/2
9/16	1.20	8 1/4	1 5/16	4.80	14 1/4	2 1/16	10.60	17
19/64	1.30	8 1/2	1 11/32	5.00	14 3/8	2 1/8	11.20	17
5/8	1.40	8 3/4	1 3/8	5.20	14 1/2	2 3/16	12.00	17
21/64	1.50	9	1 13/32	5.40	14 5/8	2 1/4	12.80	17 1/2
11/16	1.60	9 1/4	1 7/16	5.60	14 3/4	2 5/16	13.60	17 1/2
23/64	1.70	9 1/2	1 15/32	5.80	14 7/8	2 3/8	14.40	18
3/4	1.85	9 3/4	1 1/2	6.00	15 Discount changes at 1 1/2.	2 7/16	15.00	18 1/2
25/32	2.00	9 7/8	1 17/32	6.30	15 1/8	2 1/2	15.60	19

Always give List Number when Ordering.

Taper Shank Twist and Straight Fluted Drills.



No. 106.
TAPER SHANK TWIST DRILL



No. 147.
TAPER SHANK STRAIGHT FLUTED DRILL.

Diam.	Price Each.	Length.	Socket.
1/64	0.45	5 1/16	
5/32	.45	5 3/8	
3/16	.50	5 5/8	
7/32	.55	5 7/8	
1/4	.60	6 1/8	
9/32	.65	6 1/4	No. 1, 1.20
5/16	.70	6 3/8	
11/32	.75	6 1/2	
3/8	.80	6 3/4	
13/32	.85	7	
7/16	.90	7 1/4	
15/32	.95	7 1/2	
1/2	1.00	7 3/4	
17/32	1.10	8	
9/16	1.20	8 1/4	
19/32	1.30	8 1/2	
5/8	1.40	8 3/4	
21/32	1.50	9	
11/16	1.60	9 1/4	No. 2, 1.80
23/32	1.70	9 1/2	
3/4	1.85	9 3/4	
25/32	2.00	9 7/8	
13/16	2.15	10	
27/32	2.30	10 1/4	
7/8	2.45	10 1/2	
29/32	2.60	10 5/8	
15/16	2.75	10 3/4	
31/32	2.90	10 7/8	
1	3.00	11	
1 1/32	3.20	11 1/8	No. 3, 2.50
1 1/16	3.40	11 1/4	
1 3/32	3.60	11 1/2	
1 1/8	3.80	11 3/4	
1 5/32	4.00	11 7/8	
1 3/16	4.20	12	
1 7/32	4.40	12 1/8	
1 1/4	4.50	12 1/2	
1 9/32	4.65	14 1/8	
1 5/16	4.80	14 1/4	No. 4.
1 11/32	5.00	14 3/8	
1 3/8	5.20	14 1/2	
1 13/32	5.40	14 5/8	
1 7/16	5 60	14 3/4	
1 15/32	5.80	14 7/8	
1 1/2	6.00	15	Discount changes at 1 1/8.
1 17/32	6.30	15 1/8	
1 9/16	6.60	15 1/4	
1 19/32	6.90	15 3/8	
1 5/8	7.20	15 1/2	
1 21/32	7.50	15 5/8	
1 11/16	7.80	15 3/4	
1 23/32	8.10	15 7/8	
1 3/4	8.40	16	
1 25/32	8.60	16 1/8	
1 13/16	8.80	16 1/4	
1 27/32	9.00	16 3/8	
1 7/8	9.20	16 1/2	
1 29/32	9.35	16 1/2	
1 15/16	9.50	16 1/2	
1 31/32	9.65	16 1/2	
2	9.80	16 1/2	
2 1/32	10.20	16 1/2	No. 4, 4.00
2 1/16	10.60	17	
2 1/8	11.20	17	
2 3/16	12.00	17	
2 1/4	12.80	17 1/2	
2 5/16	13.60	17 1/2	
2 3/8	14.40	18	
2 7/16	15.00	18 1/2	
2 1/2	15.60	19	
2 9/16	16.20	19 1/4	No. 5, 7.50
2 5/8	16.80	19 1/2	
2 11/16	17.60	20	
2 3/4	19.00	20 1/2	
2 13/16	20.00	20 1/2	
2 7/8	21.00	21	
2 15/16	23.00	21	
3	25.00	21	

Drills of any size or length, with Taper or Straight Shanks, made to order, and to fit any socket desired.
In ordering special Tapers give the length of Shank and Diameter at each end of it.

Always give list number when ordering.

64th sizes furnished at price of next larger size.

Ratchet Drill, Center Drill and Reamers.

Square Shank Ratchet Drills.



No. 111.

Diameter.	Length. Inch.	Each.	Diameter.	Length. Inch.	Each.	Diameter.	Length. Inch.	Each.
1/4	5	1.00	11/16	6 1/2	1.45	1 1/16	9	3.10
9/32	5	1.05	23/32	6 1/2	1.50	1 5/32	9	3.25
5/16	5	1.10	3/4	6 1/2	1.55	1 3/16	9	3.35
11/32	5	1.15	25/32	6 1/2	1.65	1 7/32	9	3.50
3/8	6	1.20	13/16	7	1.75	1 1/4	9	3.65
13/32	6 1/4	1.25	27/32	7	1.90	1 9/32	9	3.75
7/16	6 1/4	1.25	7/8	7 1/2	2.05	1 5/16	9	3.90
15/32	6 1/4	1.30	29/32	7 1/2	2.15	1 11/32	9	4.05
1/2	6 1/2	1.30	15/16	8	2.30	1 3/8	9	4.20
17/32	6 1/2	1.35	31/32	8	2.45	1 13/32	9	4.35
9/16	6 1/2	1.35	1	8 1/2	2.55	1 7/16	9	4.50
19/32	6 1/2	1.40	1 1/32	8 1/2	2.70	1 15/32	9	4.65
5/8	6 1/2	1.40	1 1/16	8 1/2	2.85	1 1/2	9	4.80
21/32	6 1/2	1.45	1 3/32	8 1/2	3.00			

No. 1 Shanks are 5/8 inch by 3/8 inch by 1 1/2 long.
" 2 " " 3/4 " 1/2 " 1 3/4 "

Drill and Countersink Combined.



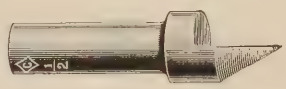
No. 98.

Size.	Diameter of Body.	Diameter of Drill.	Price, per Dozen.	Size.	Diameter of Body.	Diameter of Drill.	Price, per Dozen.
A	3/10	5/32 and 1/8	1.50	E	13/64	1/16 and No. 45.	1.50
B	3/10	1/8 and 1/8	1.50	F	7/16	5/32 and 5/32	3.00
C	3/10	3/32 and 3/32	1.50	G	7/16	3/16 and 3/16	3.00
D	15/64	No. 49 and No. 45.	1.50	H	7/16	3/16 and 5/32	3.00

Center Reamers.



No. 1.



No. 2.

No. 125—A.

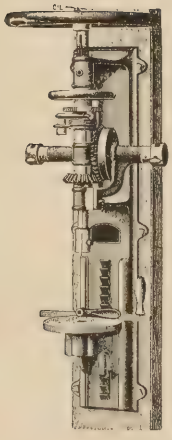
Angle 60 Degrees—Unless Otherwise Ordered.

Size Shank.	Size Body.	Price, No. 1 Each.	Price, No. 1 Dozen.	Price, No. 2 Each.	Price, No. 2 Dozen.	Size Shank.	Size Body.	Price, No. 1 Each.	Price, No. 1 Dozen.	Price, No. 2 Each.	Price, No. 2 Dozen.
3/16	1/4	.25	2.90	.22	2.50	3/8	1/2	.35	3.75	.30	3.25
1/4	3/8	.30	3.25	.25	2.90	1/2	3/4	.75	8.50	.70	8.00

Special sizes made to order—less than 1/2 dozen of a size will be charged at single price, each.
Always give list number when ordering.

Drilling Machines.

No. 2. Drilling Machine, Straight Table.



No. 2.
DRILLING MACHINE, STRAIGHT TABLE.

Use left-hand crank for large drills. The power is multiplied one and one-half times. Use the right-hand crank for small drills. The speed is multiplied one and one half times.

Drills to 1¼ Inches.

Change of feed instantaneous. Table of this machine is perfectly square with spindle. All parts interchangeable. Has iron bed.

No. 2 ..... 18.00

No. 6. Drilling Machine.

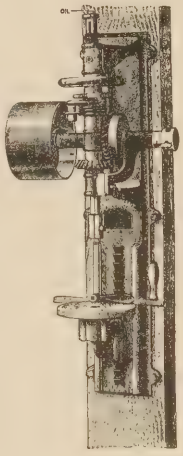
Adapted for Either Hand or Power.

We send Swing Table, unless otherwise ordered. With Cone Pulley, if desired, at same price.

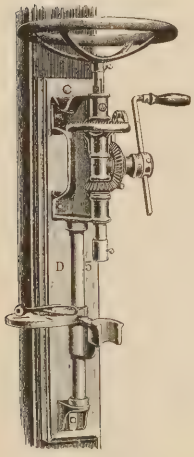
Drills to ¾ Inch.

No. 6. Straight Table for Power 21.00
No. 6. Swinging " " 23.00

Weight of Machine, 150 pounds.



No. 6.
DRILLING MACHINE.



No. D 5.
DRILLING MACHINE.

No. D 5. Drilling Machine.

A Strong, Serviceable Drill Press.

Compact and thoroughly well-made machine in every particular.

Drills to one inch diameter hole. Drills to center of 14-inch circle. Swinging Table (either side). Easily adjusted to height.

Spindle is made of steel and has Tool Steel Set Screw hardened and tempered.

Spindles are made to receive ½-inch or $\frac{41}{64}$ Shanked Twist Drills.

Unless otherwise ordered, Spindles with ½-inch hole will be sent.

No. D 5 ..... 8.50

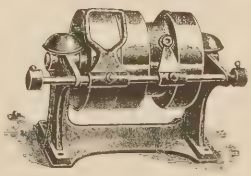
Countershaft for Drilling Machines.

When desired, we furnish with our Upright Drilling Machines countershafts with cone pulley, as shown in illustration.

These countershafts should run about 200 revolutions per minute.

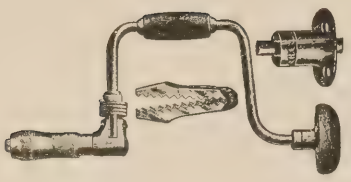
Pulleys are 8 inches diameter, 2 inches face.

Price 10.00



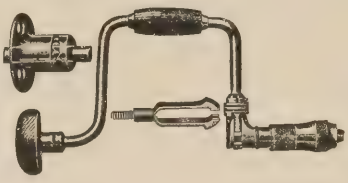
COUNTERSHAFT FOR DRILLING MACHINES.

Ratchet Braces and Drills.



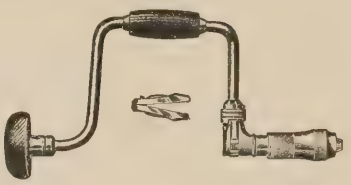
No. 30.
RATCHET BRACE.

	Per Dozen.
No. 30, 14 inch sweep	42.00
" 31, 12 "	39.00
" 32, 10 "	36.00
" 33, 8 "	33.00
" 34, 6 "	30.00



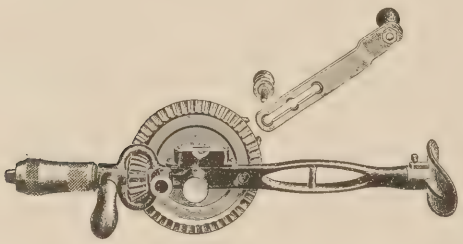
No. 40.
RATCHET BRACE.

	Per Dozen.
No. 40, 14 inch sweep	33.00
" 41, 12 "	30.00
" 42, 10 "	27.00
" 43, 8 "	24.00
" 44, 6 "	21.00



No. 222.
RATCHET BRACE.

	Per Dozen.
No. 222 Plain 10 inch	12.00
" 223 " 8 "	11.00
" 322 Rachet 10 "	23.00
" 323 " 8 "	22.00

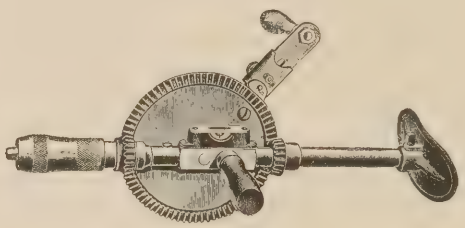


No. 12.
BREAST DRILL, BALL BEARING.

Changeable gear from even to speeded about 3 to 1.

Has cut gears, adjustable cranks, level attachment to show when being held true, alligator jaws, holding both round and square shanks. Also an extra pair of jaws for fine drills. The handles are Cocobola and the chuck nickeled. Everything about the tool will be found durable and nicely finished.

Price, per dozen 30.00



No. 13.
BREAST DRILL, BALL BEARING.

This Drill is double geared and has a 6-inch drive-wheel giving speed at 4½ to 1. The gears are cut, the handles Cocobola and the stock and chuck nickel plated. Note the level attachment to show when the tool is being held true, also the extension crank.

Price, per dozen 48.00

Chain Drill.

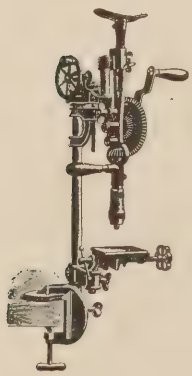


CHAIN DRILL.

This Drill can be either fed automatically or with a hand feed at the option of the operator. The automatic feed is self-regulating, according to the size of the drill, feeding very rapidly or slowly as may be desired. The frame is japanned with polished socket. Made in three styles:

No. 17 Chain Drill with plain socket; ½-inch hole with set screw, each 1.25
" 18 as above, provided with chuck for holding square bit shanks, each 1.75
" 19 same as No. 17, provided with three jawed chuck for holding round shanks from 0 to ½ inch, each 3.75

Universal Hand Drill Presses.



No. 20.
UNIVERSAL HAND DRILL PRESS.

The standard and frame in Drill Press No. 20 was designed to apply to our No. 12 Breast Drill, so as to convert it into a Drill Press or Bench Drill. The illustration shows our No. 12 Breast Drill thus converted.

The bench clamp, vise rest and frame are all clamped to the main standard, and so can be moved up and down, or swung to the right or left, and by means of the thumb screws provided, clamped or secured at any desired point.

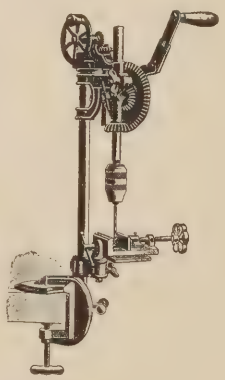
The table can be reversed to present either a vise or table, as the operator may require, and is hung on a pin off center to admit of a variety of positions.

The operator may, if desirable, work below the bench by dropping the frame and fixtures down on the standard, and securing the upper end of the same in the bench clamp. This is very convenient in bicycle repairing. In short, the number of positions, heights and adjustments that will suggest themselves as necessity demands, with this tool is astonishing.

No. 21 represents the Universal Hand Drill Press with special drilling attachment provided for it. This drilling attachment has double gears (large, 5 inches, small, 2 inches in diameter), extension handle, three jawed chuck, taking straight shank drills from 0 to ½ inch.

Attachment only, No. 20 (without Breast Drill), each 4.00
Standard and drilling attachment complete, No. 21, each 7.00

In ordering No. 20 note that the Breast Drill is not included.



No. 21.
UNIVERSAL HAND DRILL PRESS.



No. 10.
PUNCHING PRESS.

No. 10. Punching Press.

Will punch ¼-inch round hole in iron ¼-inch thick, or $\frac{5}{16}$-inch round hole in iron $\frac{3}{16}$-inch thick.

It will punch as far as 1½ inches from edge of the work.

Supplied with ⅛, $\frac{3}{16}$ and ¼-inch punches and dies. Unless otherwise ordered, punches and dies will be supplied $\frac{1}{32}$-inch over exact sizes. Weight, 80 pounds.

Price, complete 25.00
Extra punches or dies, each ..... .50

The handle may be set at any angle, up or down, to suit various kinds of work. This machine is carefully made throughout of the best material.



No. 20.
PUNCHING PRESS.

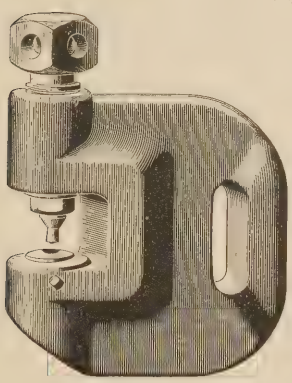
No. 20. Punching Press.

Will punch ½-inch hole in iron $\frac{5}{16}$-inch thick as far as 3⅛ inches from edge of work. For convenience in using the larger sizes of punches and dies, the ratchet may be brought into play by throwing in the dog. Each machine fitted with two handles.

Price of machine with ¼, $\frac{5}{16}$ and ⅜-inch punches and dies 45.00
Machine with ⅛, $\frac{3}{16}$, ¼, $\frac{5}{16}$ and ⅜-inch punches and dies 47.50
Extra punches, each ..... .50
Dies, each ..... .75

Weight, 250 pounds.

Unless otherwise ordered, punches and dies will be supplied $\frac{1}{32}$-inch over exact sizes.



BOILER MAKERS' STEEL
SCREW PUNCH.

Boiler Makers' Steel Screw Punches.

The bodies of these Punches are made of the highest grade of steel castings, having a tensile strength of 80,000 pounds. The parts are carefully machined and fitted. The tool is fully guaranteed to do the work up to the capacity given.

A	punches	$\frac{5}{16}$	inch hole in	¼	inch iron,	1½	inch from edge,		20.00.	Weight	15 lbs.
B	"	½	"	¼	"	1½	" "		24.00.	"	17 "
C	"	½	"	$\frac{5}{16}$	"	1½	" "		30.00.	"	27 "
D	"	¾	"	½	"	2	" "		40.00.	"	40 "
E	"	¾	"	¾	"	2½	" "		60.00.	"	60 "
F	"	¾	"	¾	"	3½	" "		75.00.	"	90 "
G	"	¾	"	¾	"	4	" "		80.00.	"	110 "

In ordering Punches, specify rivet sizes of punches and dies wanted.

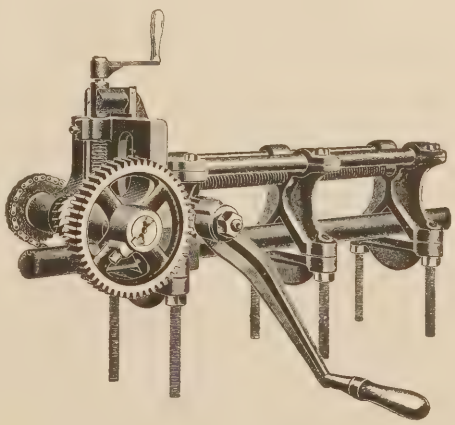
One punch and die furnished. Extra punches and dies, per pair: Nos. A and B, 3.50; Nos. C and D, 4.00; Nos. E, F and G, 5.00.

No. 1 Portable Shaft Keyseater.

Mills Keyseats in shafting in position up to 5 in. diameter.
Mills Keyseats up to 1⅛ x ⅝-inch full width at one cut.
Support directly under cutter at all times.
Mills Keyseats without chatters.
Mills Keyseats with true sides and smooth bottoms.
Self-centering and automatic feed.

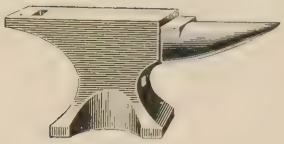
Machine has five cutters, by which Keyseats from ¼-inch to 1⅛-inch wide, varying $\frac{1}{16}$-inch, may be cut full width at one operation.

Each 50.00

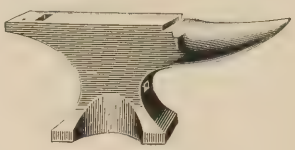


PORTABLE SHAFT KEYSEATER.

Blacksmith Anvils and Tools.



BLACKSMITHS' ANVIL.



FARRIERS' CLIP HORN ANVIL.

Weights from 10 to 800 Pounds.

80 to 425 lbs	Base		40 to 49 lbs	.03	per lb. extra
426 to 625 "	.01½	per lb. extra	30 to 39 "	.05	" "
626 to 800 "	.01	" "	20 to 29 "	.08	" "
70 to 79 "	.01½	" "	10 to 19 "	.15	" "
60 to 69 "	.01	" "	Farrier Clip Horn	.01	" "
50 to 59 "	.02	" "			



BLACKSMITH SLEDGE.

3 to 5 lbs., per lb ..... .36
5 lbs. and over, per lb ..... .30



DOUBLE FACE SLEDGE.

5 lbs. and over, per lb ..... .30



COLD CUTTING CHISEL.

1 to 3 lbs., per lb ..... .50



HOT CUTTING CHISEL.

1 to 3 lbs., per lb ..... .50



HARDIES.

½ to 1¼ inch Shanks, per lb ..... .50



SET HAMMER.

1 to 2½ inches, per lb ..... .50



TOP SWAGES.

¼ to 4½ inches, per lb ..... .50



BOTTOM SWAGES.

¼ to 4½ inches, per lb ..... .50



TOP FULLER.

¼ to 3 inches, per lb ..... .50



BOTTOM FULLER

¼ to 3 inches, per lb ..... .50



SQUARE FLATTER.

1 to 4½ inches, per lb ..... .50



ROUND FLATTER.

1 to 4½ inches, per lb ..... .50



BLACKSMITH TONGS, STRAIGHT LIPPED.

Length, inches	12	14	16	18	20	22	24	26	28	30
Per dozen	5.75	6.75	7.75	8.75	9.75	11.00	12.50	14.00	15.75	17.50



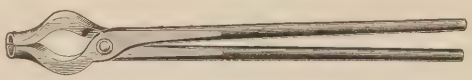
ROUND PUNCHES.

¼ to 1 inch, per lb .. .50



SQUARE PUNCHES.

¼ to 1 inch, per lb .. .50



GAD TONGS.

Per pound ..... .40



SINGLE PICKUP TONGS.

Per lb ..... .40



DOUBLE PICKUP TONGS.

Per lb ..... .40

Solid Cast Steel Hammers.

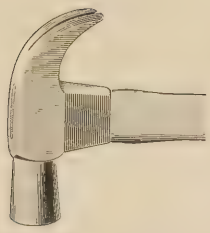


FIG. 1106.—ADZE EYE.

Weight	1 lb.
Per dozen	6.50

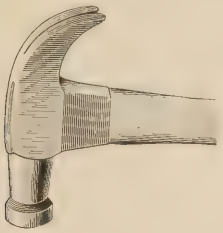


FIG. 1107.—ADZE EYE, BELL FACE.

Weight	1 lb.
Per dozen	6.50

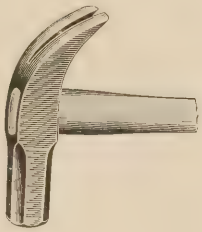


FIG. 1108.—BRAD HAMMER.

Weight	4 oz.
Per dozen	5.50



FIG. 1118.—TINNERS' PANEING. (Tool Steel.)

Weight.	Per Doz.
8 oz	6.75
12 oz	7.00
1 lb	7.50
1 lb. 4 oz	8.00
1 lb. 8 oz	8.50
1 lb. 12 oz	9.25

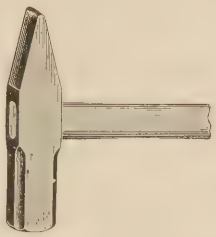


FIG. 1119.—TINNERS' RIVETING.

Weight.	Per Doz.
8 oz	6.00
12 oz	6.25
1 lb.	6.75
1 lb. 4 oz	7.25
1 lb. 8 oz	7.75
1 lb 12 oz	8.50

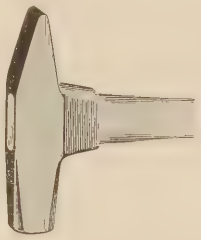


FIG. 1121.—RIVETING HAMMER, ADZE EYE.

Weight.	Per Doz.
6 oz	7.50
9 oz	8.00
12 oz	8.50
1 lb	9.00
1 lb. 4 oz	9.50

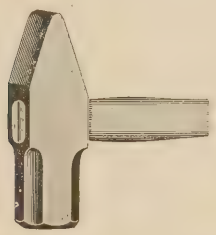


FIG. 1123.—FACE AND PEIN.

Weight.	Per Doz.
1 lb. 2 oz	12.00
1 lb. 10 oz	13.00
2 lb	14.00
2 lb. 8 oz	15.00
3 lb	16.00
3 lb. 8 oz	17.00
4 lb. 8 oz	19.00

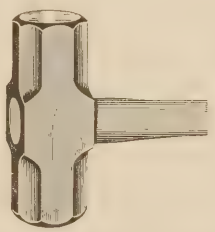


FIG. 1124.—DOUBLE FACE.

Weight	Per Doz.
1 lb. 8 oz	14.50
2 lb	15.50
2 lb. 6 oz	16.50
3 lb	18.00
3 lb. 10 oz	19.50

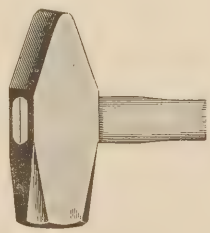


FIG. 1125.—BLACKSMITHS' HAND.

Weight.	Per Doz.
1 lb. 10 oz	13.00
2 lb	14.00
2 lb. 10 oz.	15.00
3 lb	16.00
3 lb. 8 oz	17.00
4 lb. 8 oz	19.00

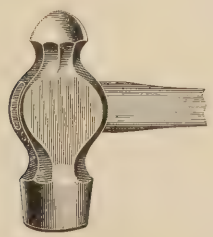


FIG. 1129.—BALL PEIN.

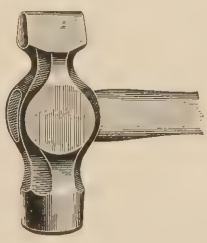


FIG. 1130.—STRAIGHT PEIN.

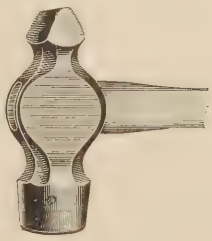


FIG. 1131.—CROSS PEIN.

Fig. 1129.—Ball Pein. Fig. 1130.—Straight Pein. Fig. 1131.—Cross Pein.

Weight	6 oz.	8 oz.	12 oz.	1 lb.	1 lb. 4 oz.	1 lb. 8 oz.	1 lb. 12 oz.	2 lb.	2 lb. 4 oz.	2 lb. 8 oz.	2 lb. 12 oz.	3 lb.	3 lb. 8 oz.
Per doz.	12.00	12.00	12.00	12.50	13.50	14.50	15.50	16.50	17.50	19.00	20.50	22.00	24.00

Hatchets, Picks, Bars, Etc.

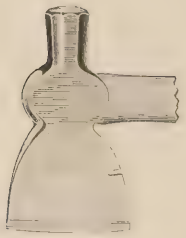


Fig. 1140.
SHINGLING HATCHETS.

Weight.	Width Bit.	Per Doz.
1 lb. 1 oz.	3½ in.	10.50
1 lb. 7 oz.	4 in.	11.00
1 lb. 12 oz.	4½ in.	11.50



Fig. 1141.
HALF HATCHETS.

Weight.	Width Bit.	Per Doz.
15 oz.	3½ in.	11.00
1 lb. 5 oz.	3⅝ in.	11.50
1 lb. 11 oz.	4 in.	12.00

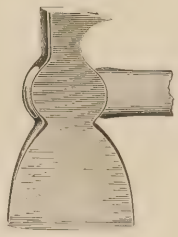


Fig. 1142.
CLAW HATCHETS.

Weight.	Width Bit.	Per Doz.
1 lb. 3 oz.	3½ in.	11.50
1 lb. 9 oz.	4 in	12.00
1 lb. 15 oz.	4½ in.	12.50



Fig. 1145.
ADZE EYE, BELL POLE, LATHING.

Weight.	Per Doz.
1 lb	15.00

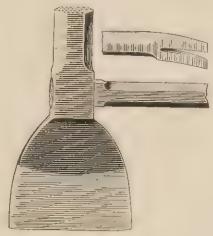


Fig. 1152.
IRON HANDLE WITH CLAW.

Weight.	Per Doz.
3 lb. 14 oz	15.00

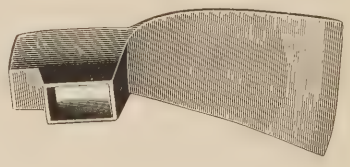


Fig. 1173.
HALF HEAD ADZE.

Width of Cut.	Per Doz.
3½ to 4½ in	24.00

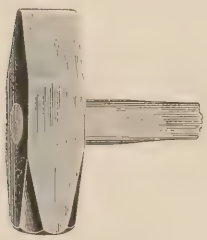


Fig. 1127.
CHIPPING HAMMER.

Weight.	Per Doz.
1 lb	12.50
1 lb. 4 oz	13.00
1 lb. 8 oz	13.50
2 lb	14.50
2 lb. 8 oz	15.50
2 lb. 14 oz	16.50



Fig. 1138.
BRICK HAMMER.

Weight.	Per Doz.
1 lb. 2 oz	13 00
1 lb. 8 oz	14.00
2 lb	15.00
2 lb. 8 oz	16.00



Fig. 1287.
CONTRACTORS' PICKS.

Lbs	7	7½	8	8½	9	9½	10
Per doz	18.00	18.50	19.00	20.00	21.00	22.00	23.00



Fig. 1288.
MINERS' SURFACE PICKS.

Lbs	3	3½	4	4½	5	5½	6	6½	7
Per dozen	$12	13	14	15	16	17	18	19	20



Fig. 1276.
WEDGE POINT CROWBAR.
Weights, 12 to 30 pounds.
Prices on Application.

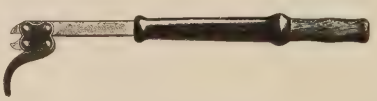


HANDLED AXES.

Per dozen 12.00



Fig. 1277.
PINCH POINT CROWBAR.
Weights, 12 to 30 pounds.
Prices on Application.



NAIL PULLER.

No. 3. Per dozen 12.00

Shovels and Spades.



Fig. 1311.
D HANDLE, SQUARE POINT.

Fig. 1311. D Handle, Square Point.

Size.	Handles.	Style.	Per. Doz.
2	D or Long,	Square Point,	15.50
3	"	"	16.00
4	"	"	16.50
5	"	"	17.00
6	"	"	17.50

Fig. 1312. D Handle, Round Point.

Size.	Handles.	Style.	Per Doz.
2	D or Long,	Round Point,	15.50
3	"	"	16.00
4	"	"	16.50
5	"	"	17.00
6	"	"	17.50



Fig. 1312.
D HANDLE, ROUND POINT.



Fig. 1313.
D HANDLE SPADE.

Fig. 1313. D Handle Spade.

Size 2. D or Long Handle, Square Point, per dozen..... 15.50
" 3. " " " " " " " 16.00

Fig. 1314. Solid Cast Steel Scoops.

Size.	Style.		Per Doz.
2	D Handle,	Half Polished.	18.00
3	"	"	18.50
4	"	"	19.00
5	"	"	19.50
6	"	"	20.00
7	"	"	20.50
8	"	"	21.00
9	"	"	21.50
10	"	"	22.00

Black, 1.00 less per dozen.



Fig. 1314.
SCOOP.



Fig. 1309.
LONG HANDLE, SQUARE POINT.

Fig. 1309. Long Handle, Square Point.

Size.	Handle.	Style.	Per Doz.
2	D or Long,	Square Point,	15.50
3	"	"	16.00

Fig. 1310. Long Handle, Round Point.

Size.	Handle.	Style.	Per Doz.
2	D or Long,	Round Point,	15.50
3	"	"	16.00



Fig. 1310.
LONG HANDLE, ROUND POINT.

Files and Rasps.



ROUND BASTARD FILE.



FLAT BASTARD FILE.



SQUARE BASTARD FILE.

Mill and Round Files.

Length, inches	4	5	6	7	8	9	10	12	14	16	18	20
Bastard, per dozen	3.00	3.20	3.50	3.90	4.30	4.90	5.60	7.50	10.70	14.70	20.20	27.40
2d Cut, "	3.50	3.80	4.00	4.60	4.90	5.80	6.40	8.60	12.20	16.80	22.70	30.70
Smooth, "	3.90	4.10	4.50	4.90	5.40	6.30	7.00	9.40	13.10	17.90	24.30	32.90

Mill, Blunt, double cut, advance 2 inches. Mill, double cut, advance 1 inch.
Mill, narrow point, advance 1 inch.

Flat Files.

Length, inches	4	5	6	7	8	9	10	12	14	16	18	20
Bastard, per dozen	3.70	3.90	4.30	4.80	5.30	6.30	7.00	9.70	13.30	17.80	23.90	31.50
2d Cut, "	4.30	4.60	4.80	5.50	6 10	7.20	8.10	11.00	15.30	20.10	26.80	35.30
Smooth, "	4.70	4.90	5.30	6.10	6.60	7.90	8.70	12.10	16.70	22.30	29.20	38.30

Cant, Blunt, double cut, advance 2 inches.

Square Files.

Length, inches	4	5	6	7	8	9	10	12	14	16	18	20
Bastard, per dozen	3.80	4.10	4.60	5.10	5.50	6.60	7.40	10.20	13.90	18.70	25.10	32.80
2d Cut, "	4.60	4.80	5.10	5.80	6.30	7.70	8.50	11.50	16.10	21.20	28.20	36.70
Smooth, "	4.90	5.30	5.50	6.30	7.00	8.30	9.10	12.80	17.50	23.30	30.40	39.30

Square, Blunt, advance 1 inch.

Hand and Pillar Files.

Length, inches	4	5	6	7	8	9	10	12	14	16	18	20
Bastard, per dozen	3.70	3.90	4.30	4.90	5.40	6.70	7.50	10.70	15.00	20.10	26.80	35.10
2d Cut, "	4.30	4.70	5.10	5.80	6.30	7.80	8.70	12.30	17.00	22.80	29.90	39.20
Smooth, "	4.80	5.30	5.60	6.30	6.70	8.30	9.40	13.50	18.20	24.20	31.50	41.60

Slotting, Blunt, advance 2 inches. Cotter, Blunt, or Taper, advance 2 inches.

Half Round and Three Square Files.

Length, inches	4	5	6	7	8	9	10	12	14	16	18	20
Bastard, per dozen	4.80	5.40	6.10	7.00	7.50	8.50	9.10	11.80	15.50	20.60	27.50	36.20
2d Cut, "	5.60	6.10	6.70	7.70	8.30	9.40	10.10	13.00	17.00	22.50	29.90	39.40
Smooth, "	6.10	6.40	7.10	8.20	8.90	9.90	10.70	13.90	18.30	24.20	32.00	42.30

Ginsaw, take Bastard list. Tumbler, advance 2 inches. Half Back, advance 2 inches.
Crossing, advance 2 inches. Feather Edge, Blunt, advance 2 inches. Half Round, advance 2 inches.

Warding Files.

Length, inches	4	5	6	7	8	9	10	11	12	13	14
Bastard, per dozen	4.00	4.50	4.90	5.90	6.40	7.80	8.70	10.90	12.30	15.20	17.00
2d Cut, "	4.80	5.30	5.90	6.90	7.50	9.00	10.10	12.70	14.30	17.40	19.40
Smooth, "	5.40	5.80	6.40	7.50	8.20	9.90	11.00	13.70	15.40	18.70	21.00

Mill Files, One Round Edge.

Length, inches	4	5	6	7	8	9	10	12	14	16	18
Bastard, per dozen	3.40	3.60	3.90	4.40	4.80	5.50	6.30	8.40	12.00	16.50	22.70
2d Cut, "	3.90	4.30	4.50	5.20	5.50	6.50	7.20	9.70	13.70	18.90	25.50
Smooth, "	4.40	4.60	5.10	5.50	6.10	7.10	7.90	10.60	14.70	20.10	27.30

Mill Files, Two Round Edges.

Length, inches	4	5	6	7	8	9	10	12	14	16	18
Bastard, per dozen	3.80	4.00	4.40	4.90	5.40	6.10	7.00	9.40	13.40	18.40	25.30
2d Cut, "	4.40	4.80	5.00	5.80	6.10	7.30	8.00	10.80	15.30	21.00	28.40
Smooth, "	4.90	5.10	5.60	6.10	6.80	7.90	8.80	11.80	16.40	22.40	30.40

Files and Rasps—Continued.

Miscellaneous Saw Files.

Length, inches	3	3½	4	4½	5	5½	6	7	8	10	12
Taper, Single Cut, per dozen	2.10	2.10	2.20	2.40	2.60	3.00	3 40	4.30	5.40	8.10	12.50
Taper, Double Cut, "	2.50	2.50	2.90	3.10	3.50	4.00	4.70	5.60	6.70	9.70	14.70
Slim Taper, Single Cut, "	2.10	2.10	2.20	2.30	2.50	2.90	3.10	3.80	4.50	6.40	9.50
Slim Taper, Double Cut, "	2.50	2.50	2.60	3.00	3.20	3.50	3.90	4.50	5.30	7.50	11.00
Band Saw, Blunt and Taper, Regular, per dozen	2.50	2.50	2.90	3.10	3.50	4.00	4.70	5.60	6.70	9.70	14 70
Band Saw, Blunt and Taper, Slim, "	2.50	2.50	2.60	3.00	3.20	3.50	3.90	4.50	5.30	7.50	11.00
Pit Saw, Single Cut, per dozen	----	----	4.80	----	5.40	----	6.10	7.00	7.50	9.10	11.80
Cant Saw, Single Cut, "	----	----	----	4.30	----	4.70	----	5.40	6.10	6.40	8.70	11.40
Cross Cut, Single Cut, "	----	----	4.80	----	5.40	----	6.10	7.00	7.50	9.10	11.80
Hook Tooth, Single Cut, "	----	----	----	----	----	----	6.70	7.70	8.30	10.10	13.00
Double End Taper, "	----	----	----	----	----	----	3.50	3.50	3.90	4.90	----

Climax, advance 2 inches on Half Round Bastard. Round Gulleting, take Pit Saw list.

Horse Rasps.

Length, inches	10	11	12	13	14	15	16	17	18
Plain, per dozen	9.40	11.40	12.80	15.20	17.80	20.90	24.40	28.90	32.90
Beveled and ¾ Rasp, per dozen	10.70	12.90	14.40	17.00	20.10	23.60	27.50	31.50	36.20
Tanged, per dozen	12.80	15.20	16.80	19.60	23.10	27.30	32.20	----	----

File Rasps.

Length, inches	6	7	8	9	10	11	12	13	14	15	16	18
Flat, per dozen	7.40	8.60	9.40	11.40	12.80	15.50	17.50	20.90	23.20	27.80	30.80	40.90
Half Round, per dozen	8.10	9.30	10.10	12.20	13.70	16.80	18.70	22.40	24.80	29.70	32.90	43.60

Wood Files.

Length, inches	6	7	8	9	10	11	12	13	14	15	16	18
Flat, per dozen	4.30	4.80	5.30	6.30	7.00	8.60	9.70	11.80	13.30	16.00	17.80	23.90
Half Round, per dozen	6.10	7.00	7.50	8.50	9.10	10.70	11.80	14.10	15.50	18.50	20.60	27.50
Cabinet, "	8.10	9.30	10.10	12.20	13.70	16.80	18.70	22.40	24.80	29.70	32.90	43.60

Wood Rasps.

Length, inches	6	7	8	9	10	11	12	13	14	15	16	18
Flat, per dozen	7.40	8.60	9.40	11.40	12.80	15.50	17.50	20.90	23.20	27.80	30.80	40.90
Half Round, per dozen	8.10	9.30	10.10	12.20	13.70	16.80	18.70	22.40	24.80	29.70	32.90	43.60
Cabinet, "	10.10	11.70	12.80	15.50	17.50	20.70	22.80	26.80	29.60	33.90	36.90	46.90

Shoe Rasps.

Length, inches	6	7	8	9	10	11	12	13	14
Flat, per dozen	8.10	9.30	10.10	12.20	13.70	16.80	18.70	22.40	24.80
Half Round, per dozen	8.10	9.30	10.10	12.20	13.70	16.80	18.70	22.40	24.80
Oval, per dozen	9.30	10.10	12.20	13.70	16.80	18.70	22.40	----	----

Knife Files.

Length, inches	4	5	6	7	8	9	10	11	12	13	14
Bastard, per dozen	5.40	6.10	6.90	7.80	8.50	9.40	10.10	12.20	13.70	16.30	18.20
2d Cut, "	6.10	6.70	7.50	8.50	9.10	10.60	11.50	13.70	15.20	17.90	19.90
Smooth, "	6.40	7.10	7.90	8.90	9.50	11.30	12.30	14.60	16.10	19.20	21.20

Stavesaw Files.

Length, 8 inches, per dozen	9.40

Stavesaw Improved Files.

Length, inches	6	7	8	9	10	12
Per dozen	6.40	7.40	8.10	9.70	10.70	15.40

Dead Smooth Files, double the list of Bastard Cut.
One Round Edge, advance the list 12½ per cent.
Blunt Files, not specified, advance 1 inch on respective kind and cut.
Single or Float Cut, not specified on regular shape, take Double Cut list.
Equaling (Bellied), advance 2 inches on respective kinds and cuts.
Two Round Edges, advance 25 per cent.

Lockjaw File Handles.

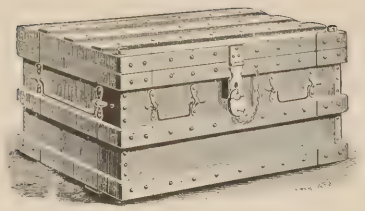
Per Gross.

No. 1 for Files 13 inches and larger	6.00	No. 4½ for Files 4 to 7 inches	4.75
" 2 " 9 to 12 inches	5.50	" 5 " 2 " 5 "	4.50
" 3 " 7 " 10 "	5.25	Assorted Nos. 1 to 5	5.00
" 4 " 5 " 8 "	5.00	No. 6 for Tinners' Soldering Coppers	8.00

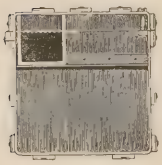
Plain File Handles.

No. 1 Hardwood Polished, Brass Ferrules, assorted 4 sizes, per gross	4.00
" 2 " " " " " 3 large " "	4.50
" 3 " " Iron " " 4 " " "	4.00
" 4 " " " " " 3 large " "	4.50
" 7 Softwood Brass Ferrules, 4 sizes, per gross	3.25
" 8 " " " 3 large sizes, "	3.50
" 9 " Iron " 4 sizes, "	3.25
" 10 " " " 3 large sizes, "	3.50

Steel Tool Chests.



Style A.
STEEL TOOL CHEST.



Style A.
SECTION.

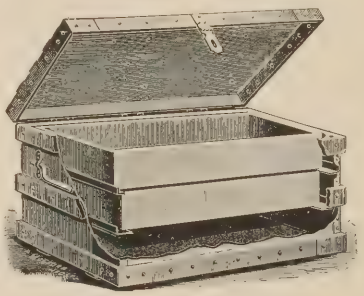
Made from $\frac{1}{16}$-inch cold rolled sheet steel with malleable iron corner pieces and hardwood braces and fitted with heavy wrought iron hinges and hasp, with cover so arranged as to be held open by support from the back of chest. Each chest is furnished with a first-class brass lock and two keys, and bolts to screw down cover at front corners. They are lighter and cheaper than any first-class make of wood chest, and will outwear several wood chests. They are painted, well proportioned and ornamental in design, and make a first-class tool chest for Steam Fitters, Gas Fitters, Plumbers and other trades where a light and strong tool chest is required. They are made in six styles and four sizes of each style.

Style A—Sent with One Drawer unless Ordered with Two.

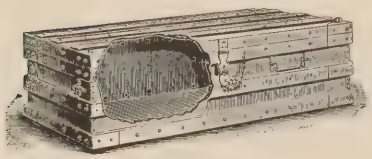
No. 1,	Style A,	11	in. deep,	12	in. wide,	24	in. long,	with one drawer			12.50
" 2,	"	14	"	15	"	30	"	"	"		17.00
" 3,	"	16	"	17	"	36	"	"	"		19.00
" 4,	"	19	"	20	"	42	"	"	"		22.00
No. 1,	Style A,	11	in. deep,	12	in. wide,	24	in. long,	with two drawers			13.00
" 2,	"	14	"	15	"	30	"	"	"		18.00
" 3,	"	16	"	17	"	36	"	"	"		20.25
" 4,	"	19	"	20	"	42	"	"	"		23.50

Style B—Sent with Two Tills unless Ordered with One.

No. 1,	Style B,	11	in. deep,	12	in. wide,	24	in. long,	with one till			13.00
" 2,	"	14	"	15	"	30	"	"	"		18.50
" 3,	"	16	"	17	"	36	"	"	"		20.50
" 4,	"	19	"	20	"	42	"	"	"		23.00
No. 1,	Style B,	11	in. deep,	12	in. wide,	24	in. long,	with two tills			13.50
" 2,	"	14	"	15	"	30	"	"	"		19.00
" 3,	"	16	"	17	"	36	"	"	"		21.00
" 4,	"	19	"	20	"	42	"	"	"		24.00



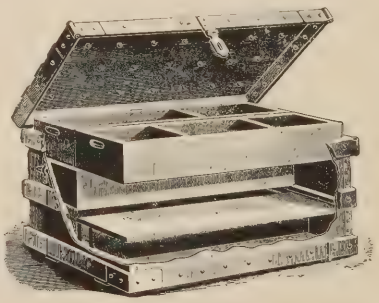
Style B.
CHEST.



Style C.
CHEST.

No. 1,	Style C,	11	in. deep,	12	in. wide,	30	in. long				12.50
" 2,	"	11	"	12	"	36	"				15.00
" 3,	"	11	"	12	"	42	"				17.00
" 4,	"	11	"	12	"	48	"				20.00

No. 1,	Style D,	11	in. deep,	12	in. wide,	24	in. long				15.50
" 2,	"	14	"	15	"	30	"				21.00
" 3,	"	16	"	17	"	36	"				23.00
" 4,	"	19	"	20	"	42	"				26.00



Style D.
CHEST.

Plumbing Section

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Modern Bath Room Interior.



DESIGN NO. 23 M. APPROXIMATE COST OF FIXTURES, 995.00

	Lists.
BATH. Porcelain Enameled, with 4¾-inch Roll Rim, Nickel Plated Bell Supply and Waste Fittings and Soap Tray, Exterior Finished Ivory White and "Empire" Border (5 foot size)	98.00
SHOWER BATH AND RECEPTOR. Nickel Plated Combination Shower and Needle Bath, with Liver Sprays, Thermometer and Rubber Curtain. Porcelain Enameled Receptor, Exterior Finished Ivory White and "Empire" Border	230.00
SITZ BATH. Porcelain Enameled, with 3-inch Roll Rim, Nickel Plated Bell Supply and Waste Fittings, with Liver Spray and Bidet, Exterior Finished Ivory White and "Empire" Border	112.50
FOOT BATH. Porcelain Enameled, with 3-inch Roll Rim, Nickel Plated Bell Supply and Waste Fittings, Exterior Finished Ivory White and "Empire" Border	51.50
LAVATORY. Mexican Onyx, with Scroll Pillars and Shelf, Decorated Vitro-porcelain Basin, Nickel Plated Offset Legs, Combination Supply and Waste Fittings, with Onyx Handles	400.00
WATER CLOSET. Vitro-porcelain Syphon Jet Decorated Bowl, Mahogany Tank, with Onyx Top, Mahogany Saddle Seat and Panel Cover, Nickel Plated Cast Brass Hinges, Supply Pipe with Air Chamber and Stop, and Paper Holder	79.00

MISCELLANEOUS TRIMMINGS.

Towel Arms	4.50
Bath Bar	6.00
Towel Basket	12.00
Sponge Holder	2.00

Modern Bath Room Interior.



DESIGN NO. 29 M. APPROXIMATE COST OF FIXTURES, 245.00

	Lists.
BATH. Porcelain Enameled, with 3-inch Roll Rim, Nickel Plated Bell Supply and Waste Fittings and Soap Dish.	
Price (5 foot), complete with Ivory or Zinc White Exterior Finish and Border	76.00
SHAMPOO. Nickel Plated 3-Valve Wall Shampoo Fixture with Rubber Bound Sprinkler	13.00
LAVATORY. Porcelain Enameled Slab and Bowl with Apron, cast integral, Enameled Back and Nickel Plated Brass Brackets, Soap Dish, Low Pattern Fuller Basin Cocks, Supply Pipes and Vented "S" Trap.	
Price, with Fittings complete	28.50
For Lavatory Enameled all over, add	3.00
FOOT BATH. Porcelain Enameled, with 2¾-inch Roll Rim, Nickel Plated Bell Supply and Waste Fittings.	
Price, complete with Ivory or Zinc White Exterior Finish and Border	50.00
WATER CLOSET. Porcelain Enameled Syphon Jet Bowl with Hardwood Tank, Seat and Cover, Nickel Plated Supply Pipe, Flush Connection and Paper Holder	33.00
If with Ivory or Zinc White Exterior Finish and Border, add	5.00
MISCELLANEOUS TRIMMINGS.	
Mirror	25.00
Glass Shelf	8.00
Towel Rack for Lavatory	2.75
Towel Rack for Bath	2.25
Sponge Holder	2.00
Coat Hook	.50

Modern Bath Room Interior.



DESIGN NO. 26 M. APPROXIMATE COST OF FIXTURES, 131.00

	Lists.
BATH. Porcelain Enameled, with 2¾-inch Roll Rim, Nickel Plated Fuller Double Bath Cock, Offset Supply Pipes, Connected Waste and Overflow, and Soap Dish.	
Price (5 foot, Plain Exterior), with Fittings complete	46.00
For No. 1 Ivory or Zinc White Exterior Finish, add	13.00
LAVATORY. Porcelain Enameled Slab and Bowl with Aprons on four sides, all cast integral, Enameled Brackets, Nickel Plated Compression Basin Cocks, Supply Pipes and "P" Trap.	
Price, with Fittings complete	20.00
For Lavatory Enameled all over, add	3.00
WATER CLOSET. Porcelain Enameled Syphon Wash-down Bowl with Hardwood Tank, Seat and Cover, Nickel Plated Supply Pipe, Flush Connection and Paper Holder	26.00
If Enameled all over, add	2.00

MISCELLANEOUS TRIMMINGS.

Mirror	24.00
Glass Shelf	8.00
Wall Soap Dish	1.75
Towel Hooks	4.00
Towel Bar	1.50
Coat Hook	.50

The Nason All Porcelain Baths.

"Roman" Pattern.



THE "NORMANDIE."

Length Outside.	Width Outside.	Depth Inside.*	Class A. Tub Only.	Class B. Tub Only.	Class C. Tub Only.
4 feet 6 inches	2 feet 6 inches	18 inches	105.00	73.50	47.25
5 " 0 "	2 " 6 "	18 "	115.00	80.50	51.75
5 " 6 "	2 " 6 "	18 "	125.00	87.50	56.25
6 " 0 "	2 " 6 "	18 "	145.00	101.50	65.25

Porcelain Feet, Round or Square, Set of Four, 4½ and 5¼ inches high	4.00
Nickel Plated Supply and Waste, as shown	25.00
Shipping Frames for Bath, extra net	3.00

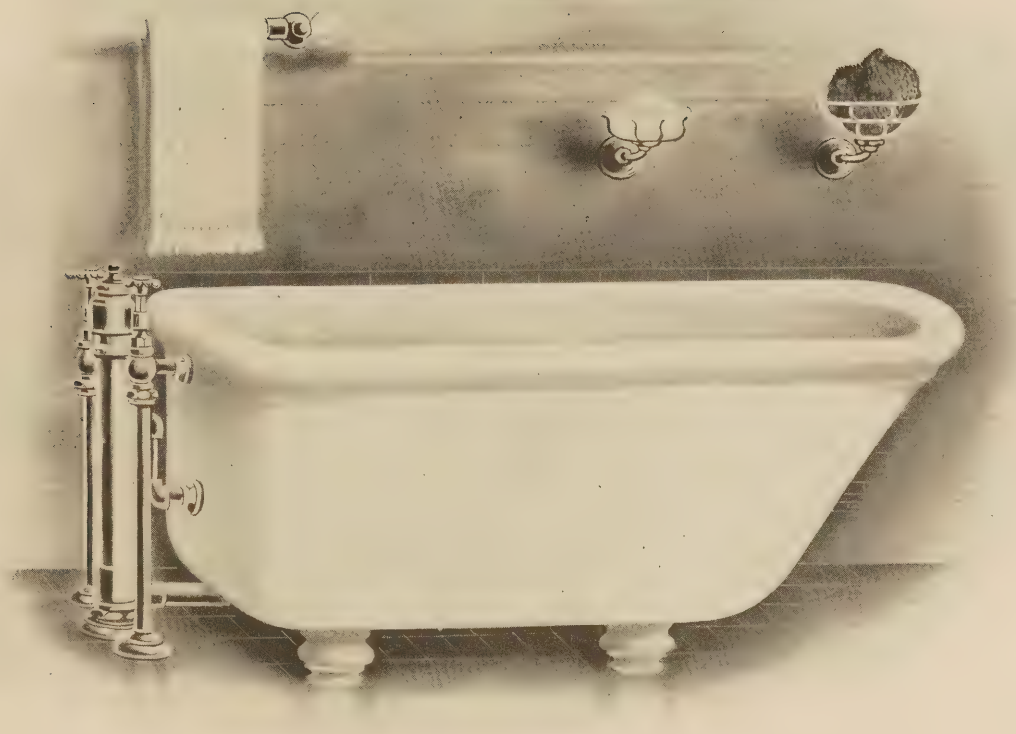
*Height over all on 4½-inch legs, 25½ inches. Add to above width 4 inches for fixtures shown.

NOTE.—This Tub is made in one piece, of hard fired earthenware, glazed inside and over roll rim; pure white to line in illustration; balance of outside of Tub left in the rough, to be finished as desired.

"Roman" Baths made with waste hole in center of bottom at back of Tub. Extra holes for special fittings cut to order.

The Nason All Porcelain Baths.

"French" Pattern.



THE "NETHERLANDS."

Length Outside.	Width Outside.	Depth Inside.*	Class A. Tub Only.	Class B. Tub Only.	Class C. Tub Only.
4 feet 6 inches.	2 feet 6 inches.	18 inches	105.00	73.50	47.25
5 " 0 "	2 " 6 "	18 "	115.00	80.50	51.75
5 " 6 "	2 " 6 "	18 "	125.00	87.50	56.25
6 " 0 "	2 " 6 "	18 "	145.00	101.50	65.25

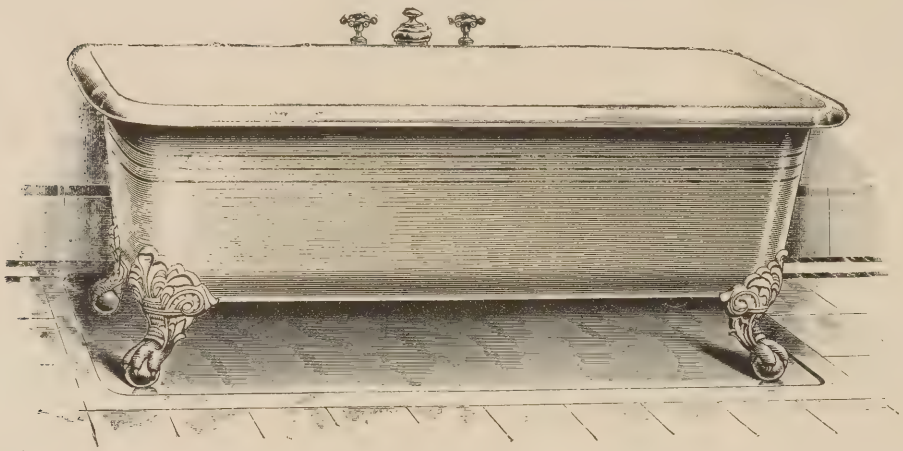
Porcelain Feet, Round or Square, Set of Four, 4½ and 5¼ inches high	4.00
Nickel Plated Bell Supply and Waste, as shown	25.00
Shipping Frames for Bath, Extra, Net	3.00

* Height over all on 4½-inch Legs, 25½ inches. Add to above length 4 inches for Fixture shown.

NOTE.—This Tub is made in one piece, of hard fired earthenware, glazed inside and over roll rim; pure white to line in illustration; balance of outside of tub left in the rough to be finished as desired. The "French" Bath always made with waste in bottom of square end. Extra hole for special fixtures cut to order.

The Nason Enameled Iron Baths.

The "Avondale."



White Enameled "Avondale" Bath Tub with 3-inch Enameled Roll Rim, with Bottom Bell Supply Fitting, Compression Valves with Brass Supply Pipes and Imperial Bath Waste. Fitting Polished and Nickel Plated all over. Exterior finished in Ivory or Zinc White with Gold Lines.

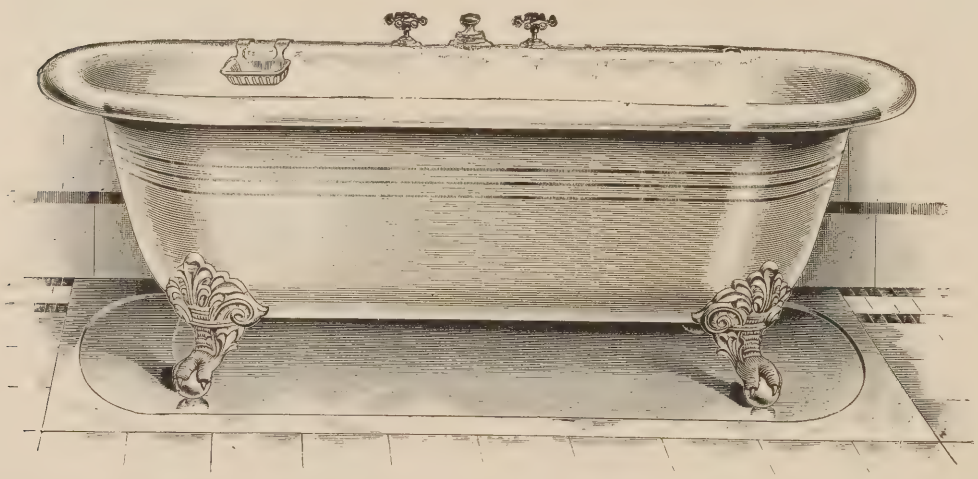
DIMENSIONS.

Width inside, 25 inches; Depth, 18½ inches; Height from floor, 24½ inches.

Size of Tub (inside)	4 ft.	4½ ft.	5 ft.	5½ ft.
Price, as described	72.85	75.35	78.65	82.85
Length over Rim	4 ft. 6½ in.	5 ft. 0 in.	5 ft. 6½ in.	6 ft. 0 in.

If without Exterior Finish, deduct.... 17.00

The "Arlington."



White Enameled "Arlington" Bath Tub with 4¾-inch Enameled Roll Rim, with Bottom Bell Supply Fitting, Compression Valves with Brass Supply Pipes and Imperial Bath Waste. Fitting Polished and Nickel Plated all over. Exterior finished in Ivory or Zinc White with Gold Lines.

DIMENSIONS.

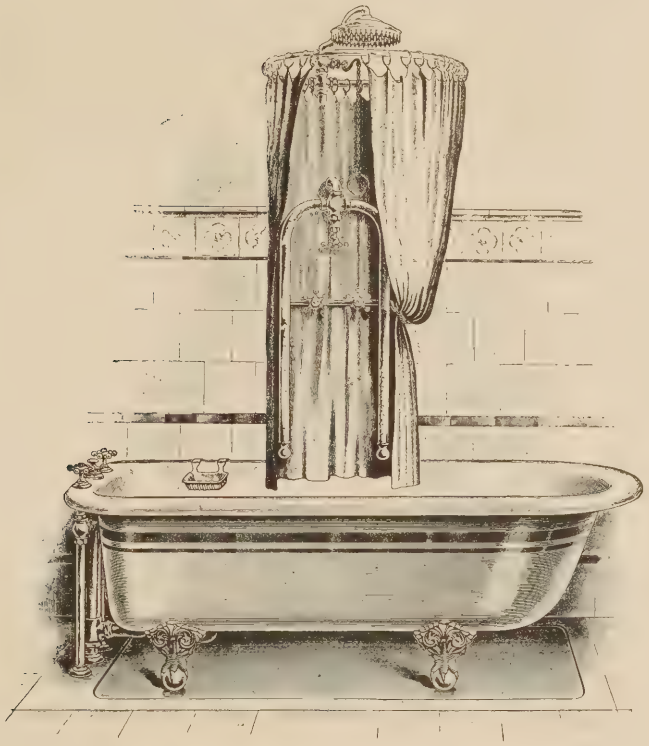
Width inside, 25 inches; Depth, 18 inches; Height from floor, 24 inches.

Size of Tub (inside)	4½ ft.	5 ft.	5½ ft.
Price, as described	87.00	91.00	96.00
Length over Rim	5 ft. 3½ in.	5 ft. 9½ in.	6 ft. 3½ in.

If without Exterior Finish, deduct.... 17.00

The Nason Enameled Iron Bath.

The "Lakewood."



White Enameled "Lakewood" Bath Tub with 4-inch Enameled Roll Rim, Nickel Plated Bottom Bell Supply Fitting, Compression Valves, Brass Supply Pipes, and Imperial Bath Waste, Nickel Plated Brass Combination Needle and Shower with Curtain Ring and Rubber Curtain. Exterior finished in Ivory or Zinc White with Gold Lines.

DIMENSIONS.

Width inside, 25 inches; Depth, 17 inches; Height from floor, 22 inches.

Size of Tub (inside)	4½ ft.	5 ft.	5½ ft.
Price, as described	170.50	175.00	179.50
Length over Rim	5 ft. 2½ in.	5 ft. 8½ in.	6 ft. 2½ in.

If without Exterior Finish, deduct.... 17.00

The Nason Enameled Iron Baths.

The "Lakewood."



White Enameled "Lakewood" Bath Tub with 4-inch Enameled Roll Rim, with Top Supply Fitting, Compression Valves with Brass Supply Pipes and Imperial Bath Waste. Fitting Polished and Nickel Plated all over. Exterior finished in Ivory or Zinc White with Gold Bands.

DIMENSIONS.

Width inside, 25 inches; Depth, 17 inches; Height from floor, 22 inches.

Size of Tub (inside)	4½ ft.	5 ft.	5½ ft.
Price, as described	80.50	85.00	89.50
Length over Rim	5 ft. 2½ in.	5 ft. 8½ in.	6 ft. 2½ in.

If without Exterior Finish, deduct..... 17.00

The "Morris."



White Enameled "Morris" Bath Tub with 3-inch Enameled Roll Rim, with Bottom Bell Supply Fitting, Compression Valves with Brass Supply Pipes and Imperial Bath Waste. Fittings Polished and Nickel Plated all over. Exterior finished in Ivory or Zinc White with Gold Bands.

DIMENSIONS.

Width inside, 24 inches; Depth, 17 inches; Height from floor, 22 inches.

Size of Tub (inside)	4 ft.	4½ ft.	5 ft.	5½ ft.
Price, as described	70.00	73.00	77.00	82.00
Length over Rim	4 ft. 8½ in.	5 ft. 2½ in.	5 ft. 8½ in.	6 ft. 2½ in.

If without Exterior Finish, deduct..... 17.00

The Nason Enameled Iron Bath.

The "Arlington."



White Enameled "Arlington" Bath Tub with 4¾-inch Enameled Roll Rim, with Nickel Plated Bottom Bell Supply Fitting, Compression Valves, Brass Supply Pipes and Imperial Bath Waste, and Nickel Plated Brass Shower and Shampoo Attachment, Curtain Ring and Rubber Curtain. Exterior finish in Ivory or Zinc White with Gold Lines.

DIMENSIONS.

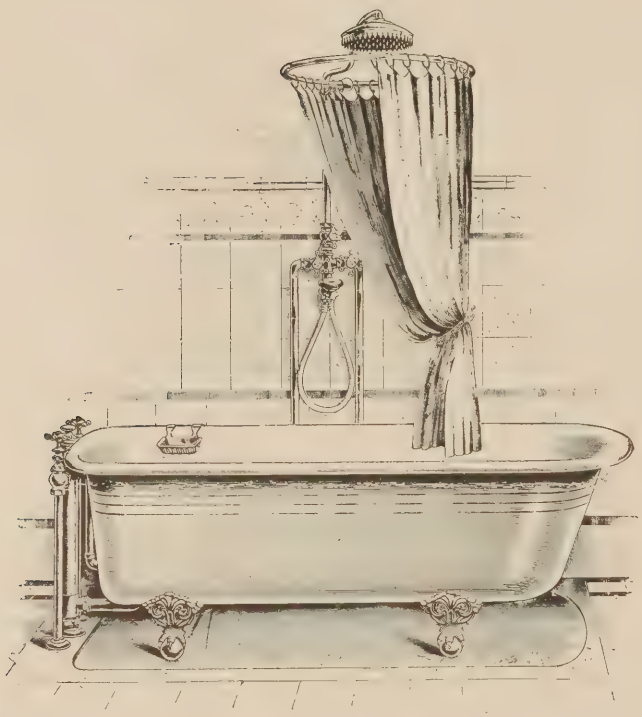
Width inside, 25 inches; Depth, 18 inches; Height from floor, 24 inches.

Size of Tub (inside)	4½ feet	5 feet	5½ feet
Price, as described	137.00	141.00	146.00
Length over Rim	5 feet 3½ inches	5 feet 9½ inches	6 feet 3½ inches

If without Exterior Finish, deduct.... 17.00

The Nason Enameled Iron Bath.

The "Perfecto."



White Enameled "Perfecto" Bath Tub with 2¾-inch Enameled Roll Rim, Nickel Plated Bottom Bell Supply Fitting, Compression Valves, Brass Supply Pipes and Imperial Bath Waste, and Nickel Plated Brass Shower with Shampoo Attachment, Curtain Ring and Rubber Curtain. Exterior Finish in Ivory or Zinc White with Gold Lines.

DIMENSIONS.

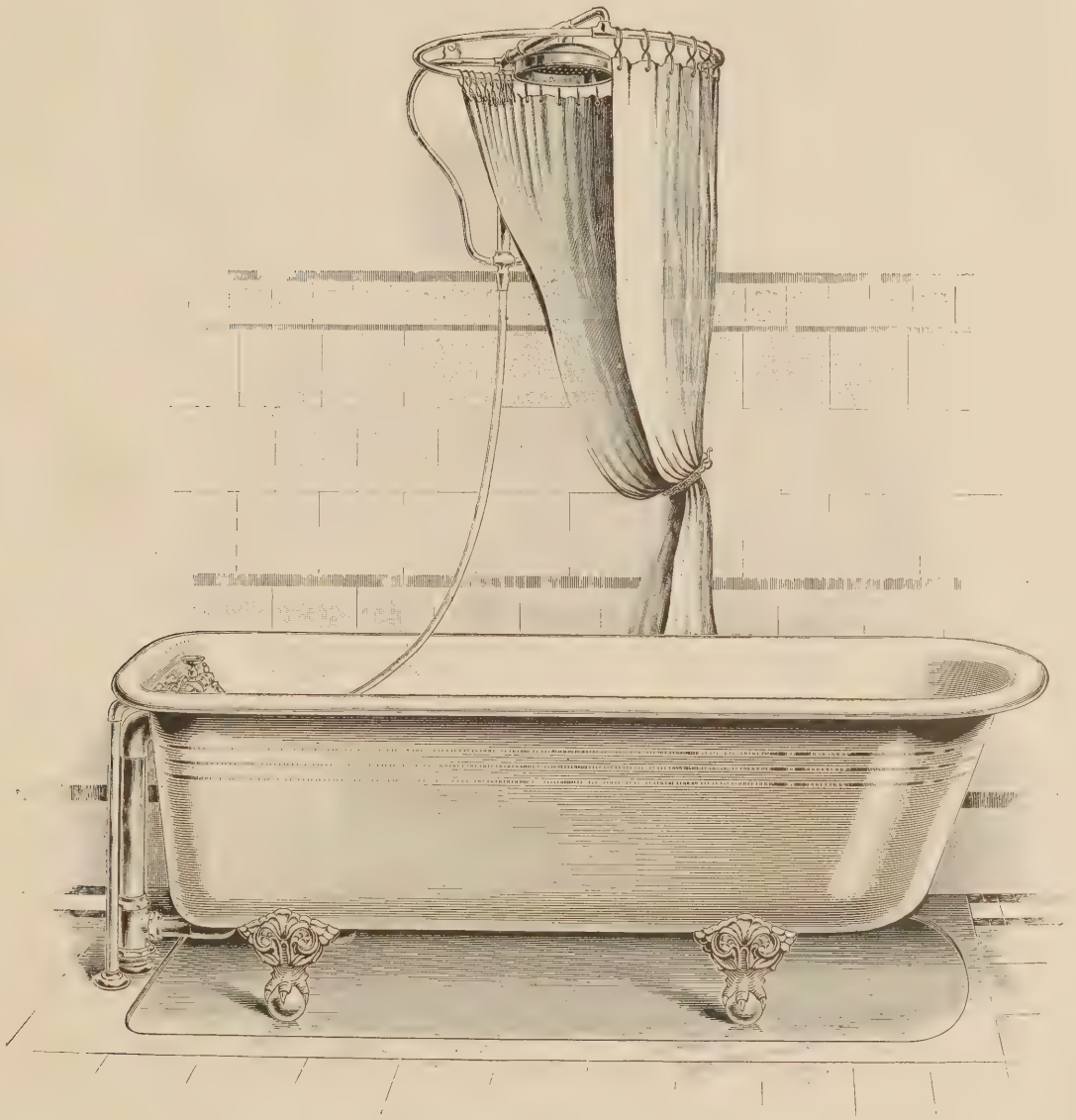
Width inside, 24 inches; Depth, 17 inches; Height from floor, 22 inches.

Length of Tub (over Rim)	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
Price, as described	106.15	108.65	112.00	116.15	121.15
Length over Fitting	4 ft. 4½ in.	4 ft. 10½ in.	5 ft. 4½ in.	5 ft. 10½ in.	6 ft. 4½ in.

If without Exterior Finish, deduct.... 17.00

The Nason Enameled Iron Bath.

The "Perfecto."



The Nason White Enameled "Perfecto" Bath Tub, with 2¾-inch "Elliptic" Roll Rim, No. 4½ Nickel Plated Fuller Double Bath Cock and Nickel Plated Brass Offset Supply Pipes; Polished and Nickel Plated connected Waste and Overflow, with Nickel Plated Strainer, Rubber Stopper and Patent Portable Shower.

Dimensions: Width inside, 24 inches; Depth, 17 inches; Height from floor, 22 inches.

Size of Tub (Over Rim)	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
Price as described	52.15	54.65	58.00	62.15	67.15
Length including Fitting	4 ft. 3½ in.	4 ft. 9½ in.	5 ft. 3½ in.	5 ft. 9½ in.	6 ft. 3½ in.

If with Exterior Finish, add 17.00

The Nason Enameled Iron Baths.

The "Winona."



White Enameled "Winona" Bath Tub with 3-inch Enameled Roll Rim, with No. 4½ Nickel Plated Fuller Double Bath Cock with Nickel Plated Offset Supply Pipes and Polished and Nickel Plated Imperial Bath Waste.

DIMENSIONS.

Width inside, 23½ inches; Depth, 18½ inches; Height from floor, 24 inches.

Size of Tub (inside)	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
Price, as described	40.00	40.00	43.00	47.00	54.00
Length (over rim)	4 ft. 5 in.	4 ft. 11½ in.	5 ft. 5½ in.	5 ft. 11½ in.	6 ft. 6 in.
Length (including fitting)	4 ft. 9 in.	5 ft. 3½ in.	5 ft. 9½ in.	6 ft. 3½ in.	6 ft. 10 in.

If with Exterior Finish, add 17.00

The "Perfecto."



White Enameled "Perfecto" Bath Tub with 2¾-inch Enameled Roll Rim, No. 4½ Nickel Plated Fuller Double Bath Cock, with Nickel Plated Brass Offset Supply Pipes and Polished and Nickel Plated Connected Waste and Overflow with Nickel Plated Strainer and Rubber Stopper.

DIMENSIONS.

Width inside, 24 inches; Depth, 17 inches; Height from floor, 22 inches.

Size of Tub (over rim)	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
Price, as described	33.50	33.50	36.50	40.50	45.50
Length (including fitting)	4 ft. 3½ in.	4 ft. 9½ in.	5 ft. 3½ in.	5 ft. 9½ in.	6 ft. 3½ in.

If with Exterior Finish, add 17.00

The Nason Enameled Iron Baths.

The "Perfecto."



White Enameled "Perfecto" Bath Tub, with 2¾-inch Enameled Roll Rim, Brass Common Overflow Connection, with Nickel Plated Strainer, Waste Plug with Rubber Stopper.

DIMENSIONS.

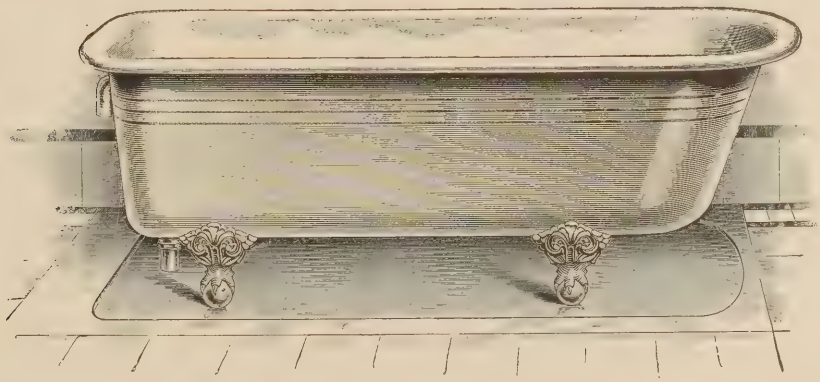
Width inside, 24 inches; Depth, 17 inches; Height from floor, 22 inches.

Size of Tub (Over Rim)	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
Price, as described	24.00	24.00	27.00	30.75	35.25
Length, including Fitting	4 ft. 2½ in.	4 ft. 8½ in.	5 ft. 2½ in.	5 ft. 8½ in.	6 ft. 2½ in.

If with Exterior Finish, add 17.00

When so ordered, "Perfecto" Bath will be furnished with Legs to stand 24 inches from floor.

The "Shawmut"



Our New Narrow Roll Rim Bath, 1½-inch Roll Rim.

DIMENSIONS.

Width inside, 21¼ inches; Depth inside, 18¾ inches; Height from floor, 23½ inches; Roll Rim, 1½ inches.

Size of Tub (Over Rim)	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.
"Shawmut"	21.75	21.75	24.00	27.75	32.25

The Nason Enameled Iron Baths.

The "Wahneta."



Porcelain Lined Roll Rim "Wahneta" Bath, with Brass Overflow Coupling, Nickel Plated Brass Strainer and Nickel Plated Brass Plug with Rubber Stopper.

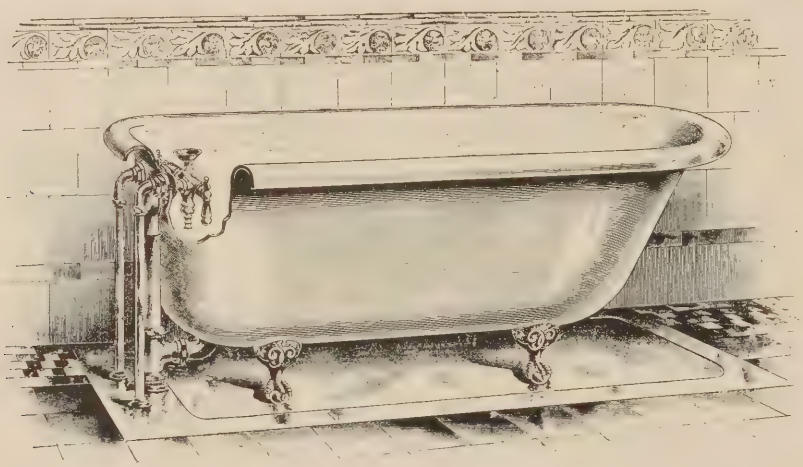
DIMENSIONS.

Length over rim, 4 feet, 4½ feet, 5 feet, 5½ feet and 6 feet; Width over rim, 28½ inches; Width inside, 24 inches; Depth inside, 17½ inches; Height from floor to top of rim, 23 inches; Width of roll rim, 2¼ inches.

	4 feet.	4½ feet.	5 feet.	5½ feet.	6 feet.
Prices, Roll Rim Bath, as described	21.75	21.75	24.00	27.75	32.25

If Bath is finished outside with Enamel Paint and Gold Bands, add to list . . 17.00

The "Wyola."



Porcelain Lined Roll Rim "Wyola" Bath, Nickel Plated Brass Patent Overflow Waste, with Nickel Plated Overflow Strainer and Plug with Rubber Stopper. Nickel Plated No. 4½ Fuller Double Bath Cock, with Nickel Plated Brass Supply Pipes to floor.

DIMENSIONS.

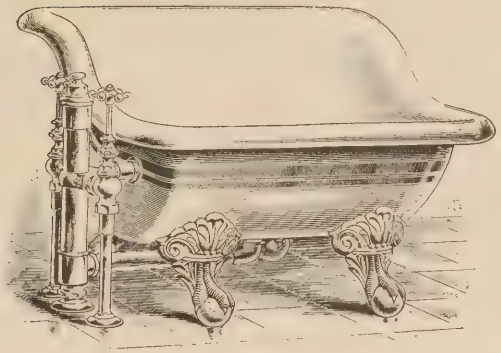
Length over all, 4 feet 2 inches, 4 feet 8 inches, 5 feet 2 inches, 5 feet 8 inches, 6 feet 2 inches; Width over rim, 30 inches; Width inside, 24 inches; Depth inside, 17½ inches; Height from floor to top of rim, 23 inches; Width of roll rim, 3 inches.

	4 feet.	4½ feet.	5 feet.	5½ feet.	6 feet.
Prices, Roll Rim Tub, as described	33.50	33.50	36.50	40.50	45.50

If Bath is finished outside with Enamel Paint and Gold Bands, add to list 17.00

The Nason Enameled Iron Baths.

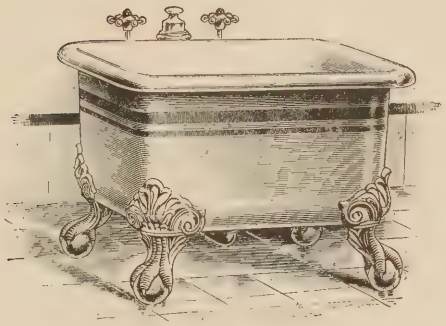
The "Nymph."



White Enameled "Nymph" Sitz Bath with 3-inch Enameled Roll Rim, Bell Supply Fitting, Compression Valves with Brass Supply Pipes and Imperial Waste. Fitting Polished and Nickel Plated all over. Exterior Finished in Ivory or Zinc White with Gold Bands.

Price, as described 67.00

The "Naiad."

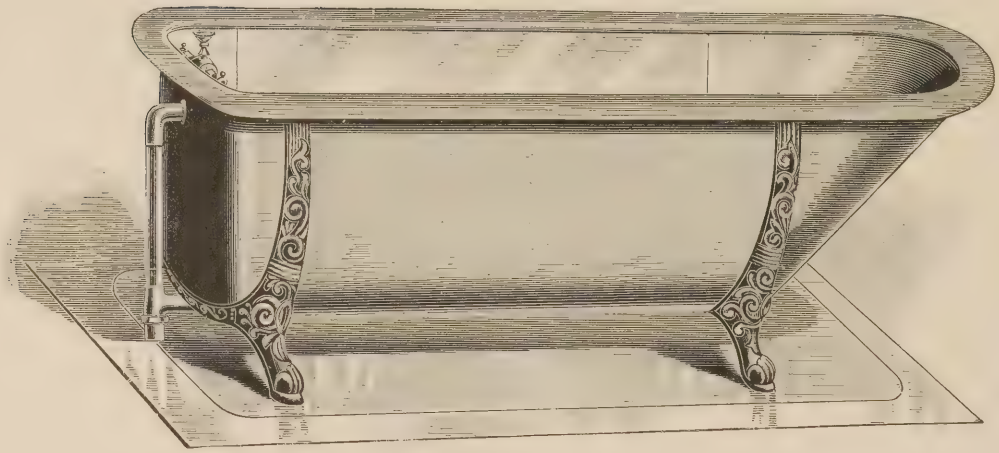


White Enameled "Naiad" Foot Bath with 3-inch Enameled Roll Rim, Bell Supply Fitting, Compression Valves with Brass Supply Pipes and Imperial Waste. Fitting Polished and Nickel Plated all over. Exterior Finished in Ivory or Zinc White with Gold Bands.

Price, as described 48.00

The Nason Copper Lined Steel Baths.

The "Lowerre."



Weight Copper Lining:	12 oz.	14 oz.	16 oz.
Size 4 feet, with Connected Waste and Overflow	24.50	26.50	28.50
" 4 " 6 inches, with Connected Waste and Overflow	24.50	26.50	28.50
" 5 feet, with Connected Waste and Overflow	25.50	27.50	29.50
" 5 " 6 inches, with Connected Waste and Overflow	26.50	28.50	30.50
" 6 feet, with Connected Waste and Overflow	28.50	30.50	32.50

List Prices do not include Bath Cock.

DIMENSIONS.

Length Outside Rim, 4 feet 6 inches; 5 feet; 5 feet 6 inches; and 6 feet.
Width Outside Rim, 28 inches; Depth Inside, 17½ inches; Height from Floor, 23½ inches.

The Nason Galvanized Steel Enamel Baths.

The "Eldora."

Coated Inside with White Enamel baked on.

Size 4 feet, with Connected Waste and Overflow	19.50
" 4 " 6 inches, with Connected Waste and Overflow	19.50
" 5 " with Connected Waste and Overflow	20.50
" 5 " 6 inches, with Connected Waste and Overflow	21.50
" 6 " with Connected Waste and Overflow	24.50

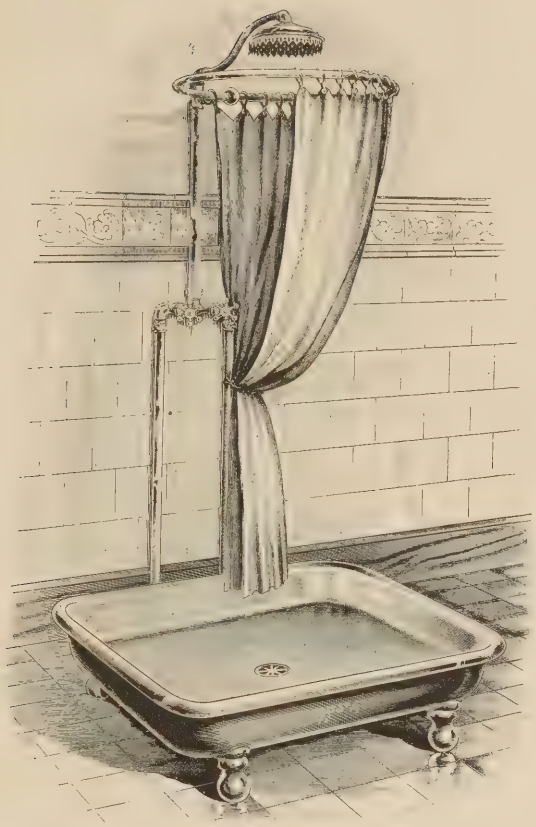
List Prices do not include Bath Cock.

DIMENSIONS.

Length Outside Rim, 4 feet 6 inches; 5 feet; 5 feet 6 inches; and 6 feet.
Width Outside Rim, 26 inches; Depth Inside, 17½ inches; Height from Floor, 23½ inches.

These tubs are furnished ready to set up; but one joint to make. Painted light blue with gold bronzed legs. Nickel plated connected Waste and Overflow, fitted for No. 4½ Fuller Cock, 3⅜ centers, unless otherwise ordered. Hardwood Rim, Oak Finish.

PLEASE NOTE.—The cut shown for the "Lowerre" Tub represents in every detail the form and construction of the "Eldora"—the "Lowerre" being Lined with Planished Copper, and the "Eldora" painted with White Enameled Paint baked on.



THE "LODORE."

The Nason Shower-Bath Apparatus.

The "Lodore."

White Enameled Iron Roll Rim Receptor.

Width over Rim	36 inches
Depth at Waste Hole	6 "
Length over Rim	36 "
Roll Rim	2 "
Receptor with Nickel Plated Shower, complete with Curtain, as shown	68.00
Complete as shown, with Receptor, 42 x 42 x 8	76.00
If Receptor is finished outside with Enameled Paint, add	5.00

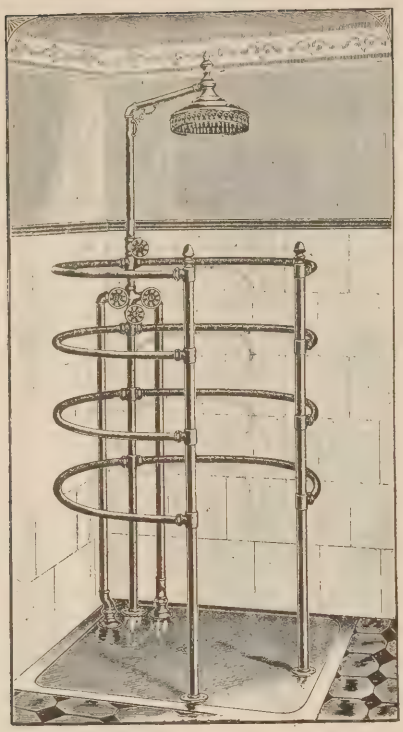
The Nason Shower-Bath Apparatus.

The "Yosemite."

Nickel Plated Shower with Shampoo, ½-inch Iron Pipe size, Check Valves, Curtain Ring and White Rubber Curtain	40.00
If with ½-inch Supplies, ¾-inch Mixing Column and 8-inch Tubular Shower	45.00
If with ⅜-inch Supplies, ½-inch Mixing Column, no Check Valves, and 8-inch Tubular Shower	35.00



THE "YOSEMITE."



THE "NIAGARA."

The Nason Shower-Bath Apparatus.

The "Niagara."

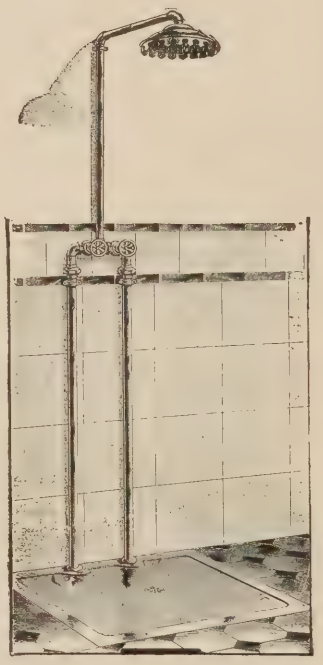
Nickel Plated Combination Needle and Shower Bath for Hot and Cold Water, with Check Valves, White Rubber Curtain and Soap Cup 140.00

The Nason Shower-Bath Apparatus.

The "Mohawk."

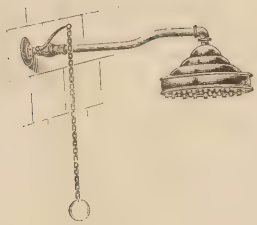
Nickel Plated Brass Shower, ½-inch Iron Pipe size, with Straight Pipes to Floor, 8-inch Tubular Shower.

As shown 30.00



THE "MOHAWK."

Portable Showers and Connections.



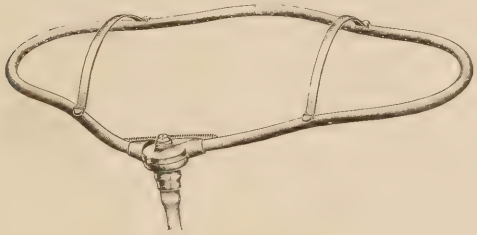
NICKEL PLATED TUBULAR SHOWER.
With Self-Closing Valve,
½-inch Iron Pipe Sizes.
Each 10.00



STANDARD PORTABLE
SHOWER, COMPLETE.
With Rubber Curtain.
Each 15.00



NICKEL PLATED
TUBULAR SHOWER.
8½-inch Diameter.
Per dozen 27.00



MELCHER SHOWER YOKE.
Price, including Hose and Single Bulb 4.00
If with Double Bulb, add to list ..... .75



SHAMPOO SPRINKLER.
With Handle.
Nickel Plated, per dozen 15.00



HOSE SPRINKLER.
For ¾ and 1 inch Hose Pipes.

Diameter	1½	2	2½
Per doz	3.50	4.50	6.00



SHAMPOO SPRINKLER.

No. 60	2½
Per dozen	3.50



SHAMPOO SPRINKLER.

No. 70	2½	3½
Per dozen	5.50	13.00

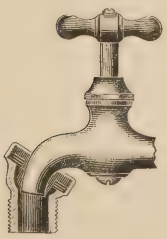


SHAMPOO SPRINKLER.

No. 70	4	5
Per dozen	21.00	27.00

Royal Hose Connections.

For Connecting Hose to Smooth Faucets, Hydrants, etc.







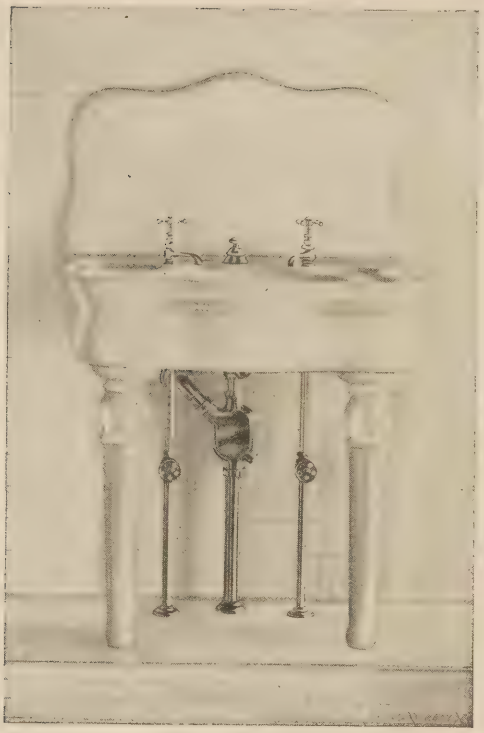
Simply push the union on the faucet; the construction is such that the water pressure holds it firmly, and the greater the pressure the tighter the joint.

Per dozen 6.00



HOSE BIBB END.

Size.	Per Doz.
½	2.50
⅝	2.50
¾	2.50
1	3.50
1¼	6.00
1½	8.00
2	15.00



The Nason Porcelain Improved Lavatory.

The "Creighton."

The Nason Porcelain Improved Lavatory with Porcelain Back and Legs; Nickel Plated Standing Waste and Overflow, China Top; Nickel Plated China Top English Pattern Basin Cocks; Nickel Plated Trap and Nickel Plated Supply Pipes and Valves; complete, as shown.

Size.	Length. Inches.	Width. Inches.	Height of Back. Inches.	Class A.	Class B.	Class C.
No. 1	30	24	15	70.00	60.00	54.00
No. 2	33	24	16	76.00	66.00	60.00

If with Nickel Plated Legs, deduct 2.00.

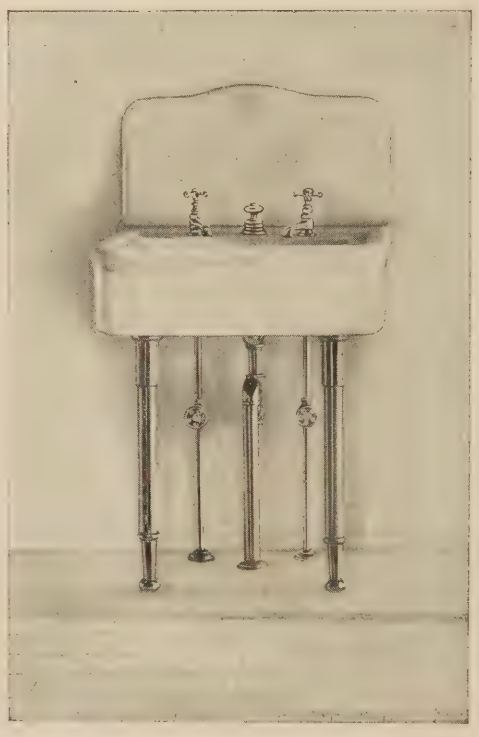
The Nason Porcelain Roll Rim Lavatory.

The "Crawford."

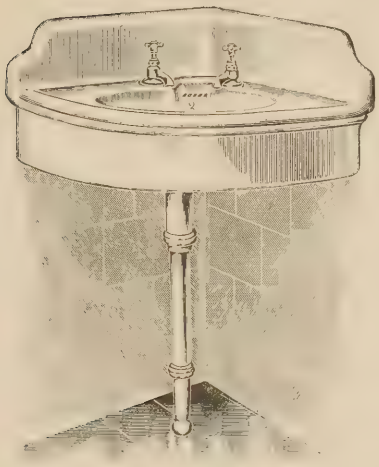
The Nason Porcelain Roll Rim Lavatory with Porcelain Back and Nickel Plated Legs, Nickel Plated Standing Waste and Overflow, China Top; English Pattern Basin Cocks, China Top; Nickel Plated Trap and Nickel Plated Supply Pipes and Valves; complete, as shown.

Size.	Length. Inches.	Width. Inches.	Height of Back. Inches.	Class A.	Class B.	Class C.
No. 1	26	21	12	52.00	46.00	40.00
No. 2	30	22	15	57.00	51.00	46.00

If with Porcelain Legs, add 2.00.



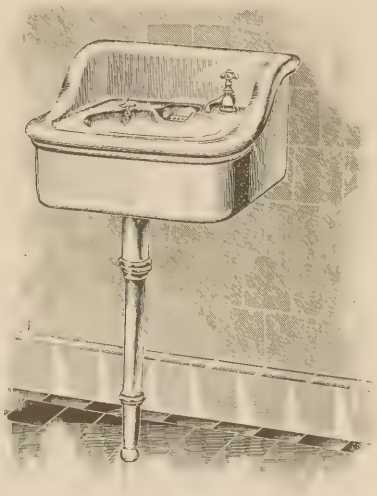
The Nason Porcelain Roll Rim Lavatories.



The Nason Porcelain Roll Rim Corner Lavatory with Solid Back. Basin, Slab, Aprons and Back made in one solid piece, with patent Overflow, Chain and Plug, Nickel Plated Leg and two English Pattern Compression Basin Cocks with china index. Complete, as shown:

Class A.	Class B.	Class C.
40.00	30.00	25.00

Dimensions: Length of sides, 19½ inches; greatest width, 28 inches; corner of wall to front, 25½ inches. Inside basin, measurement, 12 x 15 x 6 inches deep.



The Nason Porcelain Roll Rim Car Lavatory Slab. Aprons and Back made in one solid piece with patent Overflow Chain and Plug, Nickel Plated Leg and one English Pattern Compression Basin Cock with china index. Complete, as shown:

Class A.	Class B.	Class C.
30.50	25.00	21.00

If with White Enameled Iron Leg deduct 2.00.

Dimensions: Lavatory, 20 x 20 inches over all; basin, inside, 11 x 14 inches.

The Nason Porcelain Drinking Fountain.

Nason Porcelain Drinking Fountain with Nickel Plated Cock, Nickel Plated Chain and Stay with Hook and Cup and Nickel Plated Trap. Complete, as shown:

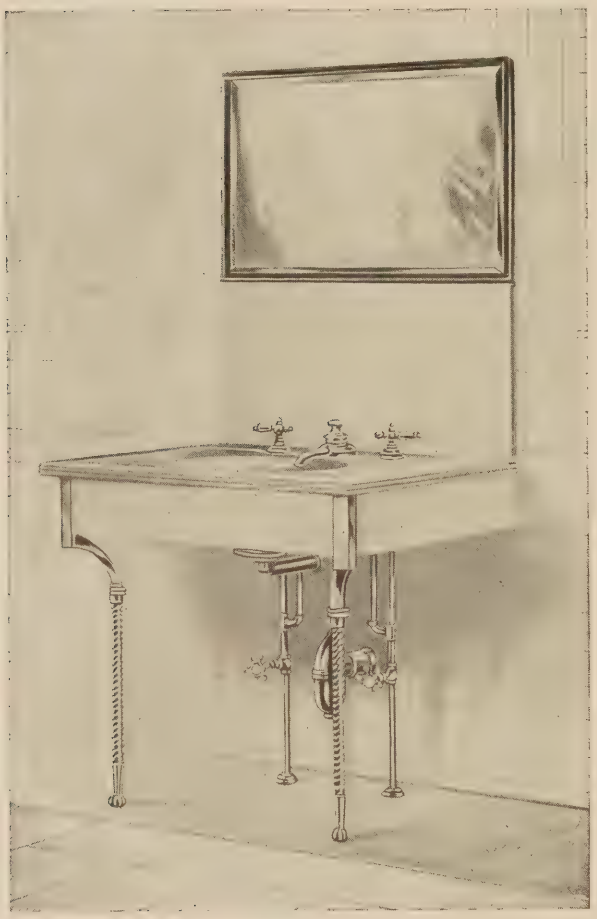
Each..... 20.00

Dimensions: 19 inches long across back, 12 inches wide from wall to front, 21 inches high.



The Nason Italian Marble Lavatory.

The "Ellwood."



The "Ellwood" Fixture above illustrated is made in 1¼-inch Italian Marble, Slab 33 x 24 inches, with 15-inch Back, 5-inch Aprons, and is finished with a Triple Bead Moulding. Plain Oval Basin, 15 x 19 inches; Fuller Combination Basin Fixture No. 3, with China Handles and China Waste Top; Nickel Plated Heavy Brass Offset Legs, Nickel Plated Apron Holders, Nickel Plated Supply Pipes with Air Chambers, China Top Valves and Nickel Plated Trap.

Complete as shown (without Mirror) 60.00

Beveled Glass Mirror with Nickel Plated Frame 30 x 20 inches 15.00

The Nason Open Lavatory.

The "Chester."



1¼-inch Italian Marble Slab, 33 x 22 inch, with 10-inch back and 5-inch Aprons; 15 x 19 Oval N. O. Basin; Nickel Plated Nason Combination Hot, Cold and Waste Fixture; Nickel Plated Bottle Trap; Nickel Plated Supply Pipes; Nickel Plated Offset Legs; Nickel Plated Apron Pockets, Basin Clamps, Screws and Washers.

Complete as shown..... 40.00

The Nason Open Lavatory.

The "Carlton."



1¼-inch Italian Marble Slab, 30 x 22 inch with 10-inch back and 5-inch Aprons; 14 x 17 inch N. O. Basin; Nickel Plated Bi-Transit Waste; Nickel Plated Ivory Handle No. 5 Fuller Basin Cocks; Nickel Plated Supply Pipes, Apron Pockets, and Nickel Plated Legs; 1½-inch Nickel Plated Full S Trap, not Vented; Screws, Washers and Basin Clamps.

Complete as shown..... 40.00

The Nason Open Lavatory.

The "Arthur."



The "Arthur" 1¼-inch Italian Marble Slab Open Lavatory 30 x 22 inches, with 10-inch Back, 15 x 19 Oval Patent Overflow Basin, Nickel Plated Basin Cocks, Chain Stay, 1½-inch Nickel Plated S Trap, with Vent, Nickel Plated Supply Pipes, Nickel Plated Brackets 16 x 18, with Nickel Plated Screws, Washers and Basin Clamps.

Complete..... 32.00

Add to list for Low Down Basin Cocks, with China Name Plate.... 2.50

The Nason Open Lavatory.

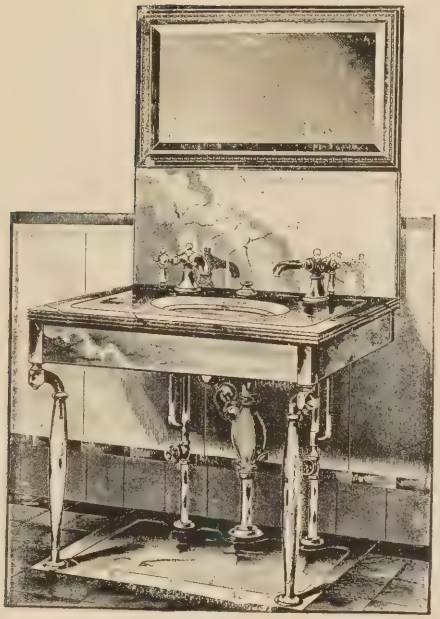
The "Harvey."



The "Harvey" 1¼-inch Italian Marble Slab, Open Lavatory, 24 x 20, with 8-inch Back; 14-inch Patent Overflow Basin, Nickel Plated T Handle Basin Cocks, Chain Stay and Chain, 1¼-inch Full S Nickel Plated Trap, no Vent; Nickel Plated Supply Pipes, Nickel Plated Rope Pattern Basin Legs, Nickel Plated Screws, Washers and Basin Clamps.

Complete, as shown..... **22.00**

The Nason Open Lavatory.



Italian Marble Slab, 32 x 24 inches, with 15-inch Back and 5-inch Front and Side Apron pieces, 15 x 19-inch Decorated Oval Basin, and the following Nickel Plated Brass Trimmings: Bi-transit Basin Waste, No. 5 Fuller Basin Cocks, "Elliptic" Trap, Supply Pipes with Air Chambers and Compression Stops, "Colonial" Pattern Offset Legs, Apron Supports, Wall and Floor Flanges, and Beveled Plate Glass Mirror with Nickel Plated Brass Frame, 32 x 30.

Price, as described, with Triple Bead Moulding..... 90.00

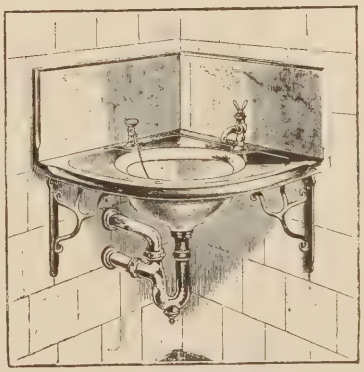
Add for 1¼-inch Countersunk Italian Marble Floor Slab, 32 x 24..... 9.00

The Nason Open Corner Lavatory.

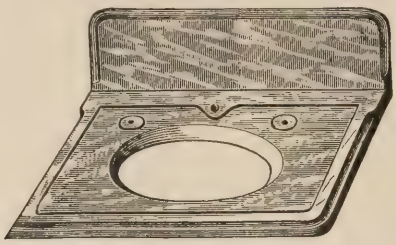
Italian Marble Corner Slab, 20 x 20 inches, with 8-inch Back, 14-inch Round Patent Overflow Basin and the following Nickel Plated Brass Trimmings: Doherty Self-Closing Basin Cock, 1½-inch Trap, Brackets, Chain Stay, Chain and Rubber Stopper and Wall Flanges.

Price, as described, with Ogee Moulding..... 14.00

If with Nickel Plated Brass Supply Pipes, add..... 3.00

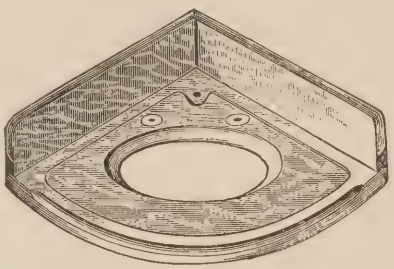


Marble Slabs.



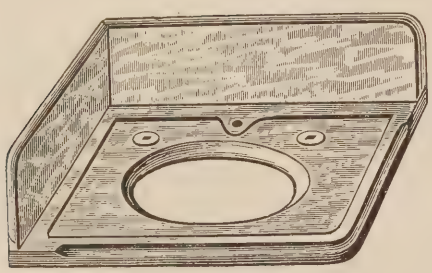
SQUARE SLAB WITH BACK.

Size of Slab. Inches.	Contents in Square Feet. With 8-inch Back.	With 10-inch Back.	With 12-inch Back.	Add for Aprons. 5-inch Apron.	6-inch Apron.
24 x 18	5 feet 1 inch	5 feet 5 inches	5 feet 10 inches	2 feet 8 inches	3 feet 2 inches
24 x 20	5 " 5 "	5 " 10 "	6 " 2 "	2 " 10 "	3 " 4 "
26 x 20	5 " 10 "	6 " 3 "	6 " 9 "	2 " 11 "	3 " 5 "
28 x 20	6 " 3 "	6 " 8 "	7 " 1 "	3 " 0 "	3 " 6 "
28 x 22	6 " 8 "	7 " 1 "	7 " 6 "	3 " 2 "	3 " 8 "
30 x 20	6 " 8 "	7 " 2 "	7 " 7 "	3 " 1 "	3 " 7 "
30 x 22	7 " 1 "	7 " 7 "	8 " 0 "	3 " 3 "	3 " 10 "
32 x 22	7 " 7 "	8 " 1 "	8 " 6 "	3 " 4 "	3 " 11 "
36 x 22	8 " 5 "	9 " 0 "	9 " 6 "	3 " 6 "	4 " 1 "

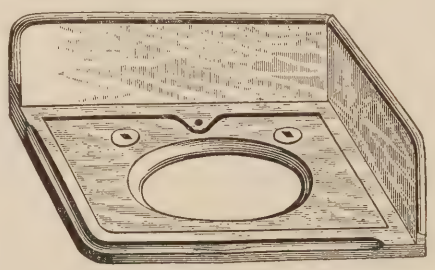


CORNER SLAB WITH TWO BACKS.

Size of Slab. Inches.	Contents in Square Feet. With 8-inch Back.	With 10-inch Back.	With 12-inch Back.
18 x 18	4 feet 11 inches	5 feet 5 inches	5 feet 11 inches
19 x 19	5 " 4 "	5 " 10 "	6 " 5 "
20 x 20	5 " 8 "	6 " 3 "	6 " 10 "
22 x 22	6 " 7 "	7 " 2 "	7 " 10 "
24 x 24	7 " 6 "	8 " 2 "	8 " 10 "
26 x 26	8 " 5 "	9 " 2 "	9 " 11 "



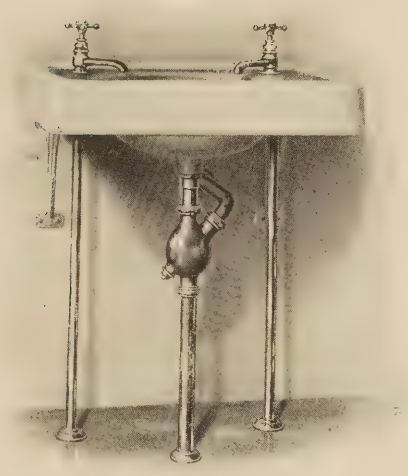
SQUARE SLAB WITH BACK AND LEFT END.



SQUARE SLAB WITH BACK AND RIGHT END.

Size of Slab. Inches.	Contents in Square Feet. With 8-inch Back.	With 10-inch Back.	With 12-inch Back.	Add for Aprons. 5-inch Apron.	6-inch Apron.
24 x 18	6 feet 1 inch	6 feet 8 inches	7 feet 4 inches	1 foot 10 inches	2 feet 2 inches
24 x 20	6 " 6 "	7 " 2 "	7 " 10 "	2 " 0 "	2 " 3 "
26 x 20	7 " 0 "	7 " 8 "	8 " 4 "	2 " 0 "	2 " 4 "
28 x 20	7 " 4 "	8 " 1 "	8 " 9 "	2 " 2 "	2 " 5 "
28 x 22	7 " 11 "	8 " 7 "	9 " 4 "	2 " 3 "	2 " 7 "
30 x 20	7 " 9 "	8 " 6 "	9 " 3 "	2 " 3 "	2 " 7 "
30 x 22	8 " 4 "	9 " 1 "	9 " 10 "	2 " 4 "	2 " 8 "
32 x 22	8 " 10 "	9 " 7 "	10 " 4 "	2 " 4 "	2 " 9 "
36 x 22	9 " 8 "	10 " 6 "	11 " 4 "	2 " 6 "	3 " 0 "

The Nason Enameled Iron Lavatories.



INTEGRAL ENAMELED IRON LAVATORY WITHOUT BACK.

The Nason Enameled Iron Lavatory with Oval Bowl, Patent Overflow and Apron on four sides, Cast Integral. Nickel Plated Brass Overflow Strainer, Nickel Plated English Pattern Compression Basin Cocks with China Index, Nickel Plated Supply Pipes, Nickel Plated Bottle Trap and Enameled Brackets.

DIMENSIONS.

Slab, 18 x 24 inches, Bowl, 12 x 15 inches, Apron, 4 inches.
" 22 x 27 " " 13 x 17 " " 4½ "
" 22 x 30 " " 13½ x 19 " " 4½ "

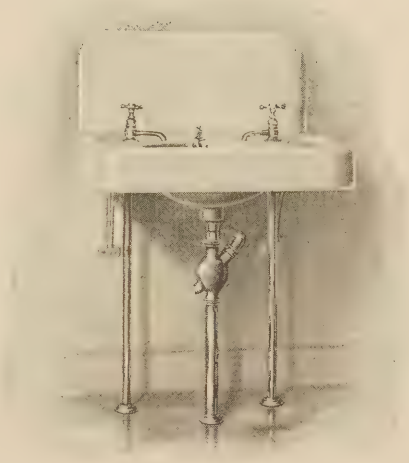
Price, complete as described, 18 x 24	25.00
" " " 22 x 27	28.50
" " " 22 x 30	31.00
" less Cocks, Pipes and Trap, 18 x 24	12.50
" " " " 22 x 27	16.00
" " " " 22 x 30	18.50

The Nason Enameled Iron Lavatory with Oval Bowl, Patent Overflow and Apron, Cast Integral. Nickel Plated Brass Overflow Strainer, Nickel Plated English Pattern Compression Basin Cocks with China Index, Nickel Plated Supply Pipes, Nickel Plated Bottle Trap and Enameled Brackets.

DIMENSIONS.

Slab, 18 x 24 inches, Bowl, 12 x 15 inches, Apron, 4 inches.
" 22 x 27 " " 13 x 17 " " 4½ "
" 22 x 30 " " 13½ x 19 " " 4½ "

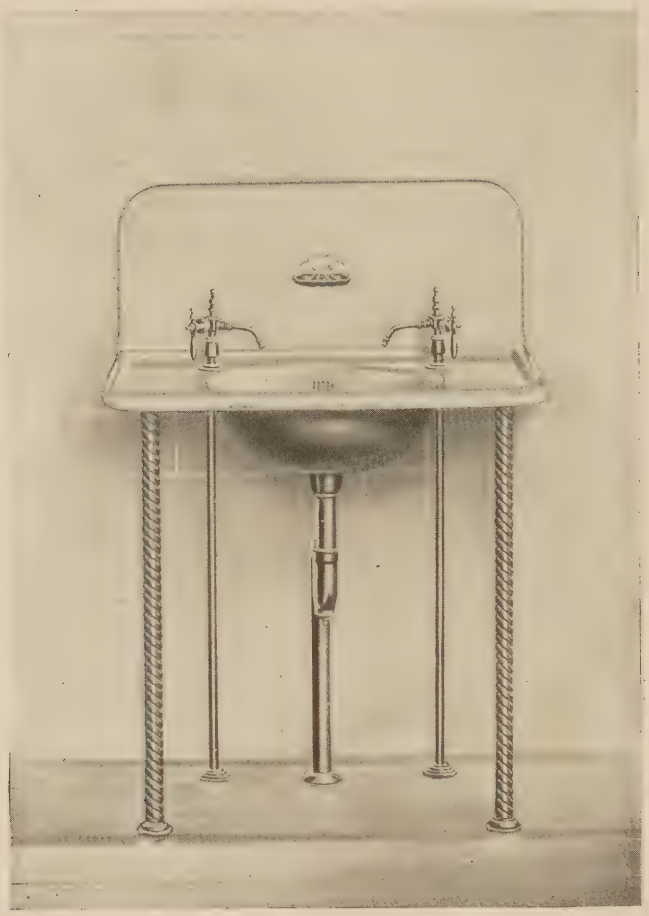
Price, complete as described, 18 x 24	27.50
" " " 22 x 27	30.00
" " " 22 x 30	33.50
" less Cocks, Pipes and Trap, 18 x 24	15.00
" " " " 22 x 27	17.50
" " " " 22 x 30	21.00
If the 22 x 27 and 22 x 30 Slabs are furnished with Imperial Basin Waste, add	7.00
If with Keystone Waste, add	6.00
If with Enameled Iron Legs instead of Brackets, add	3.00
If with Nickel Plated Brass Legs, add	4.50



INTEGRAL ENAMELED IRON LAVATORY WITH BACK.

The Nason Enameled Lavatory.

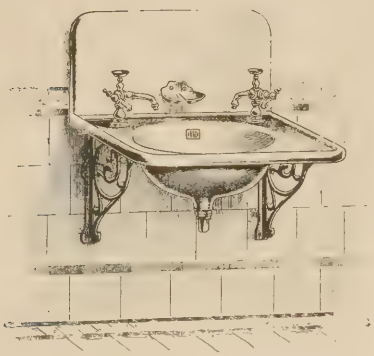
The "Arleigh."



The Nason Enameled Iron Lavatory, 30 x 24 inches, with Nickel Plated Rope Pattern Legs, Fuller Improved Nickel Plated Basin Cocks, Nickel Plated 1½-inch S Trap, without Vent, and Nickel Plated Supply Pipes.

Complete, as shown 28.00

The Nason Enameled Iron Lavatories.



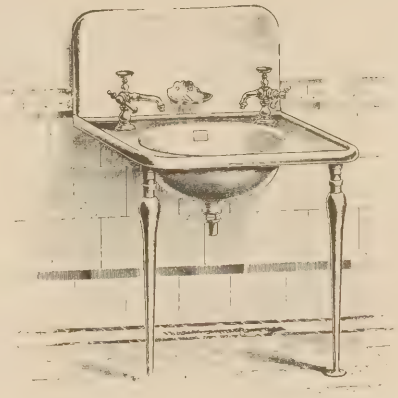
Style A.

The Nason Enameled Iron Lavatory with Oval Bowl, Patent Overflow, Nickel Plated Brass Overflow Strainer, Waste Plug with Rubber Stopper, Nickel Plated Brass Soap Cup, Exterior Bronzed and with Bronzed Iron Brackets.

DIMENSIONS.

Slab, 16 x 20 inches; Bowl, 11 x 14 inches.
" 18 x 24 " " 12 x 15 "
Height of Back, 12 inches.

Price, less Faucets, 16 x 20 ..... 10.00
Price, less Faucets, 18 x 24 ..... 12.00
Price, Enameled all over, with Enameled Brackets, less Faucets, 16 x 20 ..... 13.00
Price, Enameled all over, with Enameled Brackets, less Faucets, 18 x 24 ..... 15.00



Style B.

The Nason Enameled Iron Lavatory with Oval Bowl, Patent Overflow, Nickel Plated Brass Overflow Strainer, Waste Plug with Rubber Stopper, Nickel Plated Brass Soap Cup, Exterior Bronzed, with Bronzed Iron Legs.

DIMENSIONS.

Slab, 16 x 20 inches; Bowl, 11 x 14 inches.
" 18 x 24 " " 12 x 15 "
Height of Back, 12 inches.

Price, less Faucets, 16 x 20 ..... 11.00
Price, less Faucets, 18 x 24 ..... 13.00

Slab, Bowl and Back Cast Integral.



Style C.

The Nason Enameled Iron **One Piece** Lavatory with Oval Bowl and Patent Overflow, all cast integral, with Nickel Plated Keystone Waste and Bronzed Iron Brackets.

Price, Bronzed Exterior, less Faucets 17.75
Price, Enameled all over, less Faucets 21.75

Particular attention is called to the Keystone Waste, made up as follows: An extra large patent overflow is cast on outside of bowl. A brass rod or lift with handle above slab operates the plug through the overflow, which is thoroughly enameled.



Style D.

The Nason Enameled Iron **One Piece** Lavatory with Oval Bowl and Patent Overflow, all cast integral; Nickel Plated Brass Waste Plug with Rubber Stopper, Chain Stay with Chain and Bronzed Iron Brackets.

Price, Bronzed Exterior, less Faucets and Chain Stay 12.75
Price, Enameled all over, less Faucets and Chain Stay 16.75
If with Chain Stay, add ..... .25

A Lavatory without joints or cracks will recommend itself at once as more desirable than the old patterns having the Slab, Bowl and Back in separate pieces, as it presents a perfectly smooth surface, preventing the lodgment of dirt, and is more easily kept in a sanitary condition.

DIMENSIONS. Styles C and D.
Slab, 18 x 24 inches; Bowl, 12 x 15 inches; Height of Back, 12 inches.

The Nason Enameled Iron Lavatories.



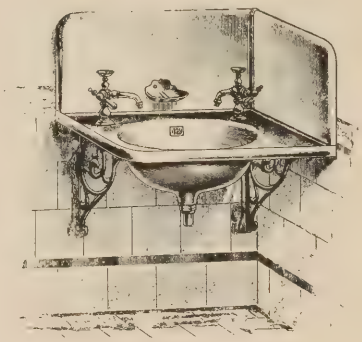
Style E.

The Nason Enameled Iron **One Piece** Lavatory, with Oval Bowl and Patent Overflow; all cast integral; Nickel Plated Brass Overflow Strainer; Waste Plug with Rubber Stopper and Soap Dish, and Bronzed Iron Brackets.

Price, Bronzed Exterior, less Faucets..... 8.00
Enameled all over, " " 11.00

DIMENSIONS.

Length of Back, 19½ inches; Bowl, 11 x 14 inches; Height of Back, 6 inches.



Style F.

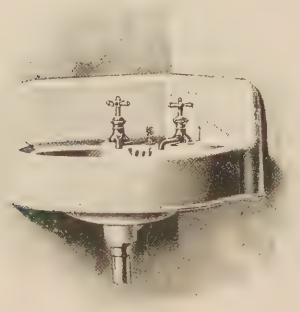
The Nason Enameled Iron Lavatory with Oval Bowl, Patent Overflow, Nickel Plated Brass Overflow Strainer, Waste Plug with Rubber Stopper, right hand end, Nickel Plated Brass Soap Cup, Exterior Bronzed and with Bronzed Iron Brackets.

DIMENSIONS.

Slab, 16 x 20 inches; Bowl, 11 x 14 inches.
" 18 x 24 " " 12 x 15 "
Height of Back, 12 inches.

Price, less Faucets, 16 x 20..... 13.00
" " " 18 x 24..... 15.00
If Brackets are furnished Enameled, add 1.00

Lavatory with left hand end instead of right hand, as shown, same price.



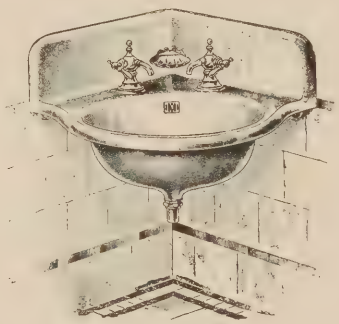
Style G.

The Nason Porcelain Enameled **One Piece** Lavatory with Oval Bowl and Patent Overflow, all cast integral. Nickel Plated Brass Waste Plug with Rubber Stopper, Soap Dish and Chain Stay.

Price, Bronzed Exterior, less Faucets..... 11.00
" Enameled all over, " " 14.00

DIMENSIONS.

Bowl, 11 x 14 inches; Height of Back, 6 inches; Length on side, 16 inches; Depth of Apron, 4¼ inches.



Style H.

The Nason Enameled Iron **One Piece** Lavatory, with Oval Bowl and Patent Overflow; all cast integral; Nickel Plated Brass Overflow Strainer, Waste Plug with Rubber Stopper and Soap Dish.

Price, Bronzed Exterior, less Faucets..... 7.50
" Enameled all over, " " 9.50

DIMENSIONS.

Length on side, 16 inches; Bowl, 11 x 14 inches; Height of Back, 6 inches.

The Nason Enameled Iron Lavatories and Basins.



Fig. 1.

Corner Enameled Iron Lavatory.

The Nason Corner Enameled Iron Lavatory with Patent Overflow, Nickel Plated Brass Overflow Strainer, Waste Plug with Rubber Stopper. Exterior Bronzed.

Dimensions: Length of Side, 12½ inches; Diameter of Bowl, 12 inches; Height of Back, 5 inches.

Each 3.50



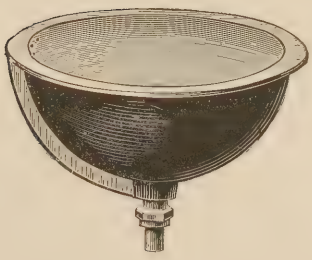
Fig. 2.

Corner Enameled Iron Lavatory.

The Nason Corner Enameled Iron Lavatory, Patent Overflow, with Nickel Plated Waste Plug with Rubber Stopper. Exterior Bronzed.

Dimensions: Length of Side, 12½ inches; Diameter of Bowl, 12 inches.

	Painted.	Galvanized.	Enameled.
Each	3.25	4.00	4.50



Round Enameled Wash Bowl.

The Nason Round Enameled Wash Bowl, Patent Overflow, Nickel Plated Waste Plug with Rubber Stopper.

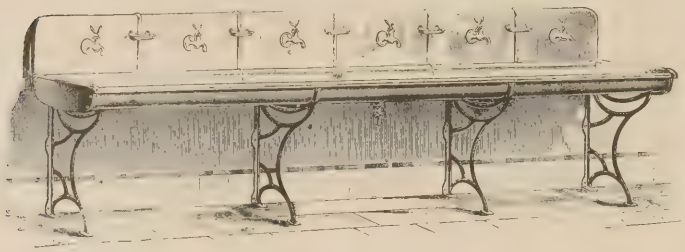
Size.	Painted.	Galvanized.	Enameled.
12 inch	1.85	2 50	3.00
14 "	2.15	2.75	3.50
16 "	2.75	3.75	4.50



Oval Enameled Iron Basin.

Size.	No Overflow.	Patent Overflow.
14 x 17	4.00	4.50
15 x 19	4.50	5.00

The Nason Factory Wash Sink.



The Nason Roll Rim Sectional Wash Sink with 12-inch Back, outlet in center with 1½-inch Nickel Plated Brass Waste Plug with Rubber Stopper, Patent Overflow with Nickel Plated Brass Overflow Strainer, Concealed Galvanized Iron Supply Pipe, with two Doherty Self-Closing Bibbs to each section, Soap Cups and Iron Brackets to floor.

DIMENSIONS.

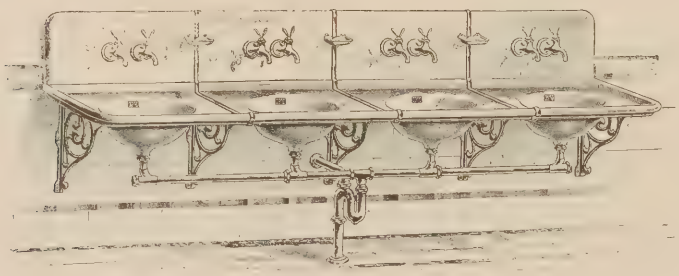
Width inside, 16 inches; Width over rim, 19½ inches; Depth, 6 inches.

	Painted.	Galvanized.	Enameled.
Price, as described, Five-Foot Sections	21.50	35.50	37.50
Add for each additional section, complete	19.50	31.50	32.50
Price, as described, but with Compression Bibbs, Five-Foot Sections	20.00	34.00	36.00
Add for each additional section, complete	18.00	30.00	31.00

Add for each additional Doherty Self-Closing Bibb	2.00
Add for each additional Compression Bibb	1.25
Add for Standing Overflow	2.00
Add for 1½-inch Rough Brass Trap, with Vent	4.50
Add for Loose Key Stop	.90

Can be furnished in any number of sections.

The Nason Sectional Enameled Iron Lavatory.



The Nason Enameled Iron Sectional Lavatories with Oval Bowls, Patent Overflows, Nickel Plated Brass Overflow Strainers, Waste Plugs with Rubber Stoppers, 12-inch Enameled Backs, Nickel Plated Brass Union Strips, Nickel Plated Brass Soap Cups, Bronzed Iron Brackets, two Doherty Self-Closing Bibbs to each section and Rough Brass Continuous Waste Pipe and Trap.

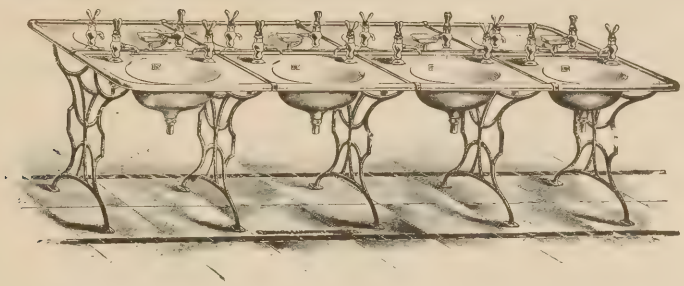
DIMENSIONS.

Slabs, 18 x 24 inches; Bowls, 12 x 15 inches.

Price, as described, four Bowls	75.00
Add for each additional section, complete	17.75
If without Bibbs, deduct, each	2.00
If without Rough Brass Continuous Waste Pipe and Trap, deduct	10.00

Can be furnished in any number of sections.

The Nason Sectional Enameled Iron Lavatory.



The Nason Enameled Iron Sectional Lavatories with Oval Bowls, Patent Overflows, Nickel Plated Brass Overflow Strainers, Waste Plugs with Rubber Stoppers, Nickel Plated Brass Union Strips, Enameled Iron Soap Cups, Bronzed Iron Brackets to floor and two Doherty Self-Closing Basin Faucets to each section.

	16 x 20. With 11 x 14 inch Basins.	18 x 24. With 12 x 15 inch Basins.
Price, as described, four bowls on each side	135.00	141.00
Add for each additional section, two bowls	33.75	35.25
If without Basin Faucets, deduct, each	2.00	

Can be furnished in any number of sections.



The Nason Factory Wash Sink.

Fitted to Use One Side.

The Nason Factory Wash Sink shown above consists of an extra heavy Sink, painted inside and outside, 120 inches long, 24 inches wide and 6 inches deep, supported by two large painted Cast Iron Standards, with 13-inch Base Flange, fitted as shown with ¾-inch galvanized Supply in painted Iron Standards over side of Sink; six ½-inch Compression Bibbs; four large Cast Iron Soap Cups with perforated bottom; Stand Pipe Overflow Plug; 2-inch painted Cast Iron S Trap with Brass Trap Screw in bottom, and Bolts and Screws for Supply Pipe Standards, Waste, Brackets, and Soap Cups.

Cock and Supply Pipe from floor to line over Sink, extra. Furnished to order.

Price, as described 38.00

Sinks of other lengths fitted similar to above, with number of Bibbs and Soap Cups to suit length of Sink can be furnished at following prices:

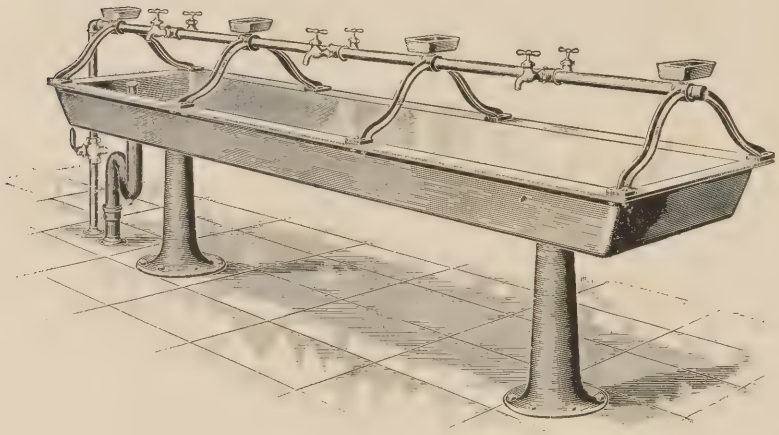
Sink. Size Inches.	Bibbs. Number.	Pipe Standards. Number.	Soap Cups. Number.	Prices. Sink Complete.
20 x 60 x 6	4	3	3	22.50
20 x 72 x 6	4	3	3	25.00
24 x 96 x 6	6	4	4	36.00

Sinks listed above, with Sink Standards and Traps, as described, but without Supply Pipe Standards, Bibbs or Soap Cups can be furnished as follows:

Sink. Size Inches.	Price Each.	Sink. Size Inches.	Price Each.
20 x 60 x 6	15.00	24 x 96 x 6	26.00
20 x 72 x 6	17.50	24 x 120 x 6	28.00

Traps same as shown, with 2-inch Hub Vent, furnished with any of above Sinks, when desired, at same price.

The Nason Factory Wash Sink.



Factory Wash Sinks.

Fitted to Use Both Sides.

The Nason Factory Wash Sink shown above consists of an Extra Heavy Sink, painted inside and outside, 120 inches long, 24 inches wide and 6 inches deep, supported by two large Painted Cast Iron Standards, with 13-inch Base Flange, fitted as shown, with ¾-inch galvanized supply in painted iron brackets over center of sink; six ½-inch Compression Bibbs, four large Cast Iron Soap Cups with perforated bottoms, Stand Pipe Overflow Plug, 2-inch Painted Cast Iron S Trap with brass trap screw in bottom and bolts and screws for Standards, Waste, Brackets and Soap Cups.

Cock and Supply Pipe from floor to line over sink, extra, furnished to order.

Price, as described 40.00

Sinks of other lengths fitted similar to above, with number of Bibbs and Soap Cups to suit length of Sink, can be furnished at following prices:

Sink. Size Inches.	Bibbs, Number.	Brackets, Number.	Soap Cups, Number.	Price, Complete.
24 x 72 x 6	4	3	3	32.50
24 x 96 x 6	6	4	4	37.50

Traps same as shown, with 2-inch Hub Vent, furnished with any of above Sinks, when desired, at same price.

The Nason Low Down Closet Apparatus.

The "Seneca."



A plain bowl, Syphon Jet Closet, with piano finish, hardwood, quartered antique oak, paneled seat and cover, saddle pattern, attached to bowl, with nickel plated brass post hinges; round column, piano finish, hardwood, quartered antique oak, pearl-top push-button tank, complete, with 2-inch flush connection; nickel plated supply pipe, with escutcheons; brass floor flange and nickel plated bolts and washers.

Complete, as shown	50.00
"Seneca" Syphon Jet Closet, with tank and seat shown on "Utica" combination	40.00
For Embossed Bowl, add to list	1.50

NOTE.—These Closets are always furnished with quartered antique oak woodwork, unless otherwise specified. Light oak, cherry or walnut can be furnished at a slight additional cost.

Size of Tank, 22½ x 8 x 18 inches high; height over all from floor, 39 inches.
Capacity, 10 gallons.
Roughs in at 13½ inches.

The Nason Low Down Closet Apparatus.

The "Utica."



A plain bowl Wash Down Syphon Closet, with cabinet finish hardwood seat and cover attached to bowl; cabinet finish, round corner, pearl-top push-button tank, complete, with 2-inch flush connection; nickel plated supply pipe and escutcheons; brass floor flange and nickel plated bolts and washers.

Complete, as shown	30.00
For Embossed Bowl, add to list	1.50

NOTE.—These closets are always furnished with oak woodwork, unless otherwise specified. Cherry, quartered oak or walnut can be furnished at a slight additional cost.

Size of Tank, 22½ x 7½ x 18 inches high; height over all from floor, 38 inches.
Capacity, 9½ gallons.
Roughs in at 12½ inches.

The Watrous "Aquameter."



THE "ANGLO."
With Lever Action Valve.

The Watrous "Aquameter"

will operate any closet; it is a self-measuring flush valve for Water Closets or Urinals, automatically measuring the water for each flush. Made in two styles, Lever Action and Seat Action, as shown by accompanying illustrations. Either style may be set up separately or in series. The Watrous "Aquameter" is simple and durable and has an easy and positive action, is perfectly balanced, opening as easily under high, as low pressure. A sediment chamber is provided in which all sand and grit is deposited, thus preventing the cutting out of the parts which would occur if the grit were allowed to grind back and forth. No cup washers are used in its construction. By a simple device the joint around the lever is maintained perfectly tight, all wear being taken up automatically without adjustment.

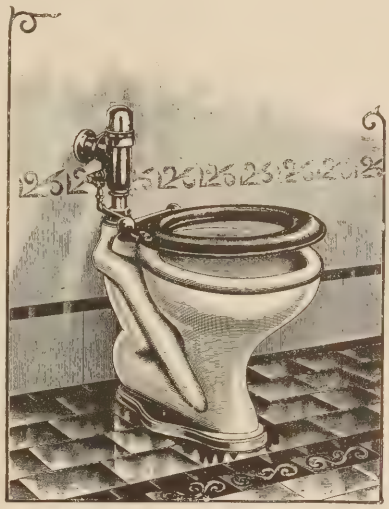
The "Anglo"

is operated by lifting the hand lever and releasing it. The valve then closes slowly and noiselessly, giving the Closet a thorough flush and an abundant refill, the length of the flush being governed by a regulating screw which can be adjusted for a long or short flush as may be desired. The volume of water may also be regulated independently of flush.

The "Anglo"

consists of Embossed Syphon Jet Closet with Oak Premier Seat attached, and the Watrous "Aquameter" (lever action), floor flange, rubber gasket and bolts.

Price, as shown	35.50
Price, with Plain Bowl	34.50



"THE ARGOS."
With Seat Action Lever.



"THE ARION."
With Lever Action Valve.

The "Argos"

is operated by a spring actuated seat to which it is simply attached and is so arranged as to give the Closet a short preliminary flush when the seat is depressed, closing off the water supply while the seat is in use, and giving full flush and ample refill when the seat is released.

This style is desirable in office buildings, hotels, railroad stations, steamships, schools and other public places, as it is automatic in operation.

The "Argos"

consists of a plain Syphon Jet Closet with Oak Premier Seat attached, and the Watrous "Aquameter" (seat action), brass floor flange, rubber gasket and bolts.

Price, as shown	33.50
Price, with Embossed Bowl	39.50

The "Arion"

consists of a Plain Wash-Down, Down-Jet Closet, with Oak Premier Seat attached to the bowl and fitted with the Watrous "Aquameter" (lever action), brass floor flange, rubber gasket and bolts.

Price, as shown	29.00
Price, with Embossed Bowl	30.00

The Nason Water Closet Apparatus.

The "Camden."



Improved Syphon Jet Closet, Embossed, with 10-gallon Cabinet Finish Oak Syphon Tank, Moulded Top; Seat to Attach to Bowl; Nickel Plated Flush Pipe and Nickel Plated Offset Slip Joint Connection.

Complete as shown (without Floor Slab)	33.00
For Nickel Plated Supply Pipe add to list	2.50
Add for 1¼-inch Marble Floor Slab, 27 x 27	7.00

The Nason Water Closet Apparatus.

The "Boston."



The "Boston" Improved Syphon Jet Closet, Plain, with 8 gallon Cabinet Finish, Oak Syphon Tank, Moulded Top; Seat to attach to Bowl. Nickel Plated Flush Pipe and Nickel Plated Offset Slip Joint Connection.

Complete as shown (without floor slab) 30.00

For Nickel Plated Supply Pipe, add to list 2.50
For 1¼-inch Marble Floor Slab, 27 x 27, add to list 7.00

The Nason Water Closet Apparatus.

The "Willard."



The "Willard" Wash Down Syphon Closet, with 8-gallon Cabinet Finish Oak Syphon Tank; Seat to attach to Bowl. Nickel Plated Flush Pipe, Nickel Plated Elbow.

Complete as shown, without Floor Slab	22.00
For Nickel Plated Supply Pipe, add	2.50

The Nason Water Closet Apparatus.

The "Weldon."



The "Weldon" Front Outlet Washout Closet, with 8-gallon Round Corner Oak Tank, Moulded Top, Cone Syphon Valve, Patented Enameled Steel Seat to attach to Bowl; Nickel Plated Flush Pipe and Nickel Plated Slip Elbow.

Complete as shown, without Floor Slab---- 20.00

If Flush Pipe is not wanted, deduct---- 2.00 If with Oak Seat, deduct---- 1.50

If with 6-gallon tank, deduct---------- .75

The Nason Water Closet Apparatus.

"La Habana."

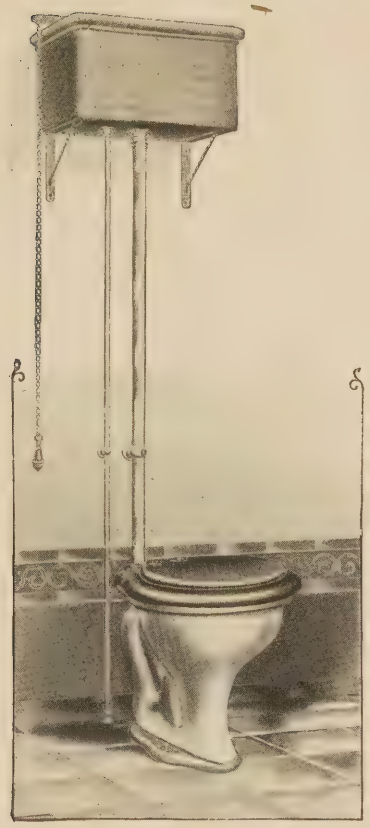


"La Habana" Apparatus, shown in the accompanying illustration, has been designed to meet the requirements of all modern sanitary rules and regulations; it is neat and cleanly in appearance, and is recommended as a substitute for iron hopper combinations where a low-priced closet is required. Where preferred, a Plain Wooden Tank, Copper Lined, will be furnished instead of Iron Tank shown, without extra charge.

"La Habana" Front Outlet Washout Closet with Seat Attachment, Cone Syphon Iron Tank, or Plain Wooden Tank, Copper Lined, Wrought Iron Flush Pipe and Rubber Elbow, Hardwood Oak Seat and Cover.

Complete as shown..... 15.00

The Nason White Enameled Iron Closet Apparatus.

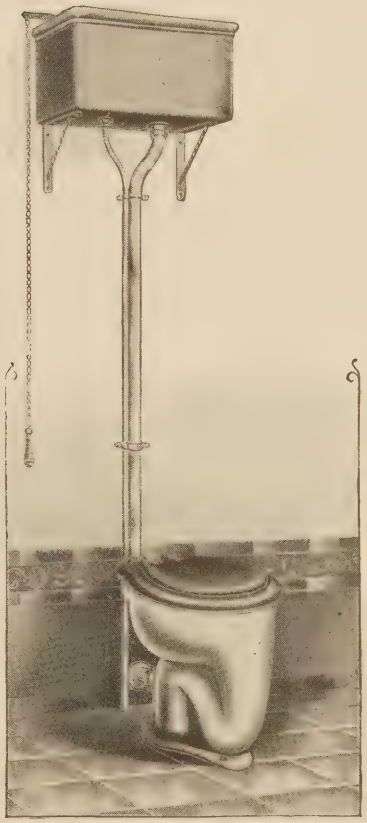


THE "LOWELL"

"The Lowell."

The Nason White Enameled Iron Syphon Jet Closet Apparatus, with large size round copper lined tank; seat attached to bowl, with lid; nickel plated flush and supply pipes and holders; nickel plated brackets, chain, bolts, etc.

Price, as described, enameled inside and outside..... 35.00
If without supply pipes, deduct..... 2.50



THE "LYNN."

"The Lynn."

The Nason White Enameled Iron Front Outlet Washout Closet Apparatus, with nickel plated vent connection to wall; seat attached to bowl, with lid; round corner copper lined tank; nickel plated flush and supply pipes and straps; nickel plated brackets, chain, bolts, etc.

Price, as described, enameled inside and outside..... 27.00
If without supply pipes, deduct..... 2.50

Furnished without vent if desired.

The Nason Anti-Freezing Closet Apparatus.



Fig. 115.
FROST PROOF CLOSET.

In Fig. 115 the water runs while the seat is occupied and shuts off and empties the pipe above the valve when the seat is released.

Owing to its simplicity, economy and low cost, this is probably the most popular form of anti-freezing closet apparatus now on the market.

Price, as shown, less Pipes and Trap--- 10.00

In Fig. 111 the valve of the closet is placed below freezing point. When the seat is occupied the tank fills, and discharges into closet when released, the balance of water in pipe above the valve then drains into the trap through the tube as shown, leaving nothing to freeze above the valve.

Price, as shown, less Pipe and Trap ---------- 13.34



Fig. 111.
FROST PROOF AFTER-FLUSH CLOSET.

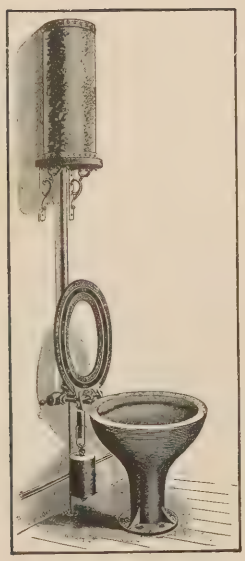


Fig. 110.
SELF-ACTING AFTER-FLUSH WATER CLOSET, SLOP HOPPER AND URINAL COMBINED.

In Fig. 110 the seat is hinged to the flush-pipe connnection. The hopper is a fan-wash, iron enameled; all other parts are of brightly galvanized iron or of brass. The end of valve spindle has a steel ball bearing at point where the seat lever operates the valve.

The seat rings are improved and strengthened and made of malleable iron.

Price, as shown in cut, with Flush Pipe --- ----- 13.34

Fig. 112, with short hopper and trap of any shape to caulk into fitting or with flange to screw to floor. State which kind in ordering, S., ½ S. or ¾ S., to caulk or screw to floor. The brass flush connection is firmly screwed into the hopper. The end of valve spindle has a steel ball bearing at point where the seat lever operates the valve.

Price, as shown, with Flush Pipe 15.00

With Brass Trap Vent to Wipe, extra, net ----- .50

With Iron Trap Vent to Caulk, extra, net ----- .25



Fig. 112.
SELF-ACTING AFTER-FLUSH WATER CLOSET, SLOP HOPPER AND URINAL COMBINED.

The Nason Enameled Iron Hoppers and Closets.



Enameled Washout Closet with 2-inch Brass Trap Vent, 1¼ Brass Supply Connection and Improved Enameled Iron Flushing Rim with Seat Lugs, attached to closet with concealed screws.

From wall to center of outlet, 9 inches.

From floor to center of vent, 7½ inches.

Price, as described, Enameled Inside..... 10.00
If Enameled Inside and Outside, add..... 2.00



Enameled Iron Syphon Washdown Closet, 1¼-inch Brass Supply Connection with improved Seat Lugs, attached to Bowl with concealed screws.

Price, as described, Enameled Inside..... 10.00
If Enameled Inside and Outside, add..... 2.00



Plate No. 1.

Short Round Enameled Hopper, English Pattern, with S Trap and Brass Supply Connection.

Height, 17 inches; outlet, 4 inches.

Painted, with Painted Trap..... 5.25
Enameled, with Painted Trap..... 6.75
Enameled, with Enameled Trap..... 7.50



Plate No. 2.

Short Oval Enameled Hopper with S Vented Trap and Brass Supply Connection.

Height, 16¼ inches; outlet, 4 inches.

Painted, with Painted Trap..... 5.25
Enameled, with Painted Trap..... 6.75
Enameled, with Enameled Trap..... 7.50



Plate No. 3.

Long Round Enameled Hopper with Hardwood Seat and Brass Supply Connection.

Height, 15¾ inches.

Painted..... 5.00
Enameled..... 6.50

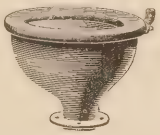


Plate No. 4.

Short Oval Hopper with Hardwood Seat and Brass Supply Connection.

Height, 11 inches; flange, 6½ inches diameter; outlet, 4 inches.

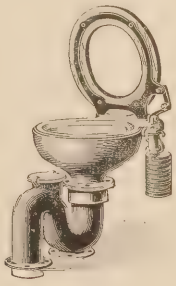
Can also be furnished with 2-inch outlet.

Painted..... 5.50
Enameled..... 6.50



HOPPER CLOSETS WITH ROUND OR SQUARE SEATS.

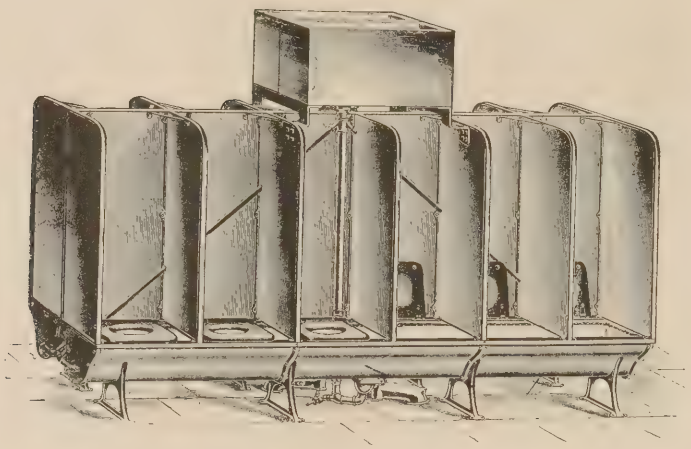
Plain..... 8.50
Enameled..... 10.50



HOPPER CLOSETS WITH ROUND OR SQUARE SEATS, S, ¾-S OR ½-S TRAPS.

Plain..... 9.50
Enameled..... 11.00
Add for 2-inch Vent..... .50

The Nason Syphon Jet Double Water Closet Range.



The Nason Syphon Jet Double Water Closet Range, with Brass Wash Down Pipes on Front, Back and Ends, Galvanized Flush Pipe from Tank to Closet, with End Washes and Copper Lined Pine Automatic Flushing Tank, with Painted Iron Brackets.

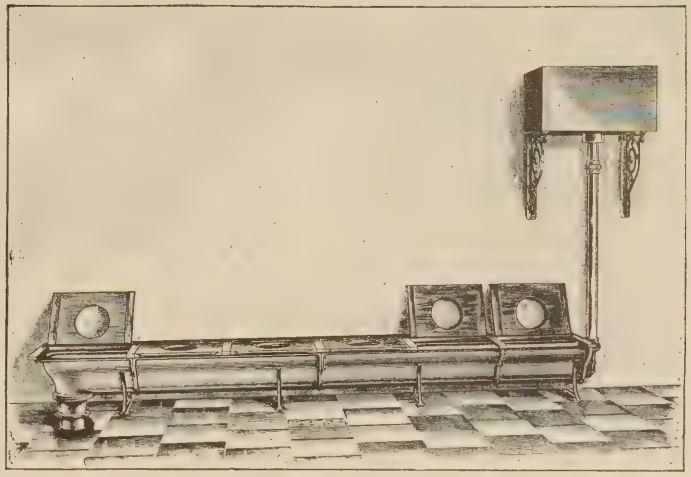
Dimensions: Height to top of Seat, 20 inches; Width at top, 15½ inches; from front of Seat to wall, 22 inches; Depth of Water at Center, 4½ inches. Diameter of Syphon Trap, 4 inches; Full Partitions, 4 feet 6 inches high, 20 inches wide.

Can be furnished to measure 18 inches, 16 inches or 14 inches from floor to top of Seats, but Trap must be placed below floor line.

Length of Range.	Length Over All.	Number of Seats.	Size of Seats.	Number of Partitions.	Prices with Painted Partitions and Painted Backs. Painted.	Prices with Painted Partitions and Painted Backs. Enameled.	Prices with Galvanized Partitions and Galvanized Backs. Painted.	Prices with Galvanized Partitions and Galvanized Backs. Enameled.
4 ft. 0 in. long	4 ft. 3 in.	For 4	24 in.	6	182.00	202.00	220.00	240.00
6 " 0 " "	6 " 4 "	" 6	24 "	8	218.00	242.00	270.00	294.00
8 " 0 " "	8 " 6 "	" 8	24 "	10	254.00	284.00	320.00	350.00
10 " 0 " "	10 " 7 "	" 10	24 "	12	290.00	328.00	370.00	408.00
12 " 0 " "	12 " 8 "	" 12	24 "	14	328.00	374.00	422.00	468.00
14 " 0 " "	14 " 8 "	" 14	24 "	16	366.00	422.00	474.00	530.00
16 " 0 " "	16 " 9 "	" 16	24 "	18	404.00	472.00	526.00	594.00
18 " 0 " "	18 " 10 "	" 18	24 "	20	432.00	524.00	578.00	660.00
20 " 0 " "	20 " 10 "	" 20	24 "	22	480.00	578.00	630.00	728.00
4 ft. 6 in. long	4 ft. 11 in.	For 4	27 in.	6	187.00	208.00	228.00	249.00
6 " 9 " "	7 " 1 "	" 6	27 "	8	225.00	252.00	281.50	308.50
9 " 0 " "	9 " 4 "	" 8	27 "	10	264.00	298.00	336.00	370.00
11 " 3 " "	11 " 8 "	" 10	27 "	12	304.00	346.00	391.50	433.50
13 " 6 " "	14 " 0 "	" 12	27 "	14	344.00	398.00	447.00	501.00
15 " 9 " "	16 " 3 "	" 14	27 "	16	387.00	454.00	503.50	570.00
18 " 0 " "	18 " 7 "	" 16	27 "	18	430.00	512.00	560.00	642.00
20 " 3 " "	20 " 10 "	" 18	27 "	20	471.00	571.00	616.50	716.50

If with 1¼ Oak Seats, 24 inch or 27 inch wide, add each---------- 2.50

The Nason Washout Water Closet Range.



The Nason Washout Water Closet Range, with Perforated Brass Wash Down Pipe on Front and Back, Galvanized Flush Pipe, Cabinet Finished Oak Seats and Copper Lined Pine Automatic Flushing Tank, with Painted Iron Brackets.

Dimensions: Height to top of Seat, 16 inches; width at top, 15½ inches; from front of Seat to wall, 19 inches. Partitions, 4 feet 6 inches high, 20 inches wide.

Length of Range.	Length Over All, including Flush Pipe Fitting.	Number of Seats.	Size of Seats.	Prices without Seats. Painted.	Prices without Seats. Enameled.	Prices with Oak Seats as Shown. Painted.	Prices with Oak Seats as Shown. Enameled.	Price with Oak Seats and Painted Iron Partitions. Painted.	Price with Oak Seats and Painted Iron Partitions. Enameled.
4 ft. 0 in. long	4 ft. 3 in.	For 2	24 inch seats	37.00	50.00	42.00	55.00	57.00	70.00
6 " 0 " "	6 " 4 "	" 3	24 " "	45.00	65.00	52.50	72.50	72.50	92.50
8 " 0 " "	8 " 6 "	" 4	24 " "	58.00	85.00	68.00	95.00	93.00	120.00
10 " 0 " "	10 " 7 "	" 5	24 " "	66.00	100.00	78.50	112.50	108.50	142.50
12 " 0 " "	12 " 8 "	" 6	24 " "	78.00	119.00	93.00	134.00	128.00	169.00
14 " 0 " "	14 " 10 "	" 7	24 " "	86.00	134.00	103.50	151.50	143.50	191.50
16 " 0 " "	16 " 11 "	" 8	24 " "	94.00	149.00	114.00	169.00	159.00	214.00
18 " 0 " "	19 " 0 "	" 9	24 " "	102.00	164.00	124.50	186.50	174.50	236.50
20 " 0 " "	21 " 0 "	" 10	24 " "	110.00	179.00	135.00	204.00	190.00	259.00
4 ft. 6 in. long	4 ft. 11 in.	For 2	27 inch seats	39.00	53.00	44.00	58.00	59.00	73.00
6 " 9 " "	7 " 1 "	" 3	27 " "	48.00	70.00	55.50	77.50	75.50	97.50
9 " 0 " "	9 " 4 "	" 4	27 " "	62.00	92.00	72.00	102.00	97.00	127.00
11 " 3 " "	11 " 8 "	" 5	27 " "	71.00	109.00	83.50	121.50	113.50	151.50
13 " 6 " "	14 " 0 "	" 6	27 " "	84.00	130.00	99.00	145.00	134.00	180.00
15 " 9 " "	16 " 5 "	" 7	27 " "	93.00	147.00	110.50	164.50	150.50	204.50
18 " 0 " "	18 " 9 "	" 8	27 " "	102.00	164.00	122.00	184.00	167.00	229.00
20 " 3 " "	21 " 0 "	" 9	27 " "	111.00	181.00	133.50	203.50	183.50	253.50

If with Local Vents under Seats, add, each 2.00

Earthenware Closets.



Embossed Syphon Jet, showing seat attachment.

Each 19.00



Plain Syphon Jet, showing seat attachment.

Each..... 18.00



Embossed Syphon Action Hopper and Trap combined, showing seat attachment.

Each..... 10.50



Plain Syphon Action Hopper and Trap combined, showing seat attachment.

Each..... 9.50

Earthenware Closets.



Embossed No. 3 Front Outlet Washout Closet, showing seat attachment.

Each 10.00



Plain No. 3 Front Outlet Washout Closet, showing seat attachment.

Each 9.00



Oval Embossed Pedestal Washout Closet, with two-inch Trap Vent.

No. 1.	Each	16.35
No. 2.	"	13.35
No. 3.	"	11.10



Oval Plain Pedestal Washout Closet, showing seat attachment.

No. 1.	Each	15.35
No. 2.	"	12.35
No. 3.	"	10.10

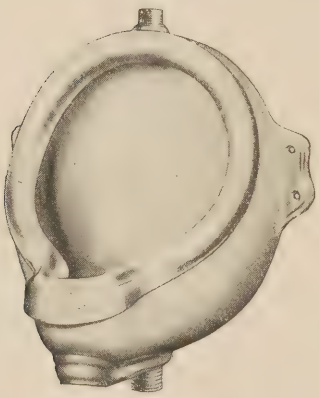
Earthenware Closets and Urinals.



Plain. No. 3.
BACK OUTLET WASHOUT CLOSET.
Showing Seat Attachment.
Each 9.00



No. 3.
FRONT OUTLET OFFSET WASHOUT.
Made with or without Seat Attachment. Either Roll Rim or Flat Rim.
Each 8.00



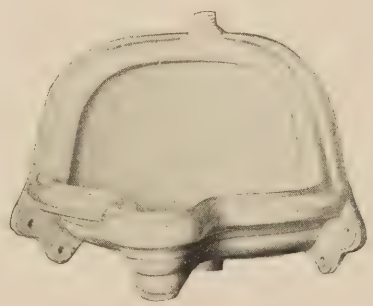
BEDFORDSHIRE URINAL, WITH LIP.

No	1	2	3
Size	15 x 18	13 x 15	12 x 14
Each	10.00	8.00	7.00



BEDFORDSHIRE URINAL, WITHOUT LIP.

No	1	2	3
Size	15 x 18	13 x 15	12 x 14
Each	8.00	6.00	5.00



CORNER URINAL, WITH LIP.

No	1	2	3
Size	12½ x 12½	11½ x 11½	10 x 10
Each	10.00	8.00	7.00

Earthenware Hoppers.



TALL ROUND HOPPER, FLUSHING RIM.

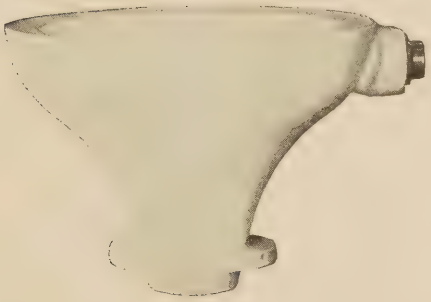
Without Vent, each 5.00
With Seat " " 5.25

Made with or without seat attachment.



PLAIN TALL HOPPER, PHILADELPHIA PATTERN.

Each 4.50



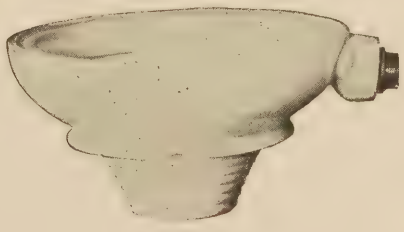
ROUND SHORT HOPPER, FLUSHING RIM.

Without Vent, each 2.50
With " " 2.75



OVAL SHORT HOPPER, FLUSHING RIM.

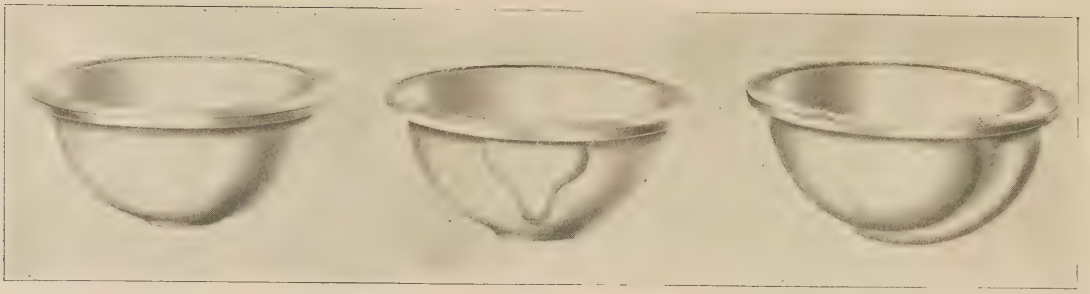
Without Vent, each 3.50
With " " 3.75



ROUND FLUSHING RIM CLOSET.

Without Vent, each 2.50
With " " 2.75

Round Basins.



ROUND, NO OVERFLOW. ROUND, COMMON OVERFLOW. ROUND, PATENT OVERFLOW.

Round Basins, No Overflow.

Outside Diameter	12	13	14	15	16
Each	1.00	1.00	1.00	1.50	2.00

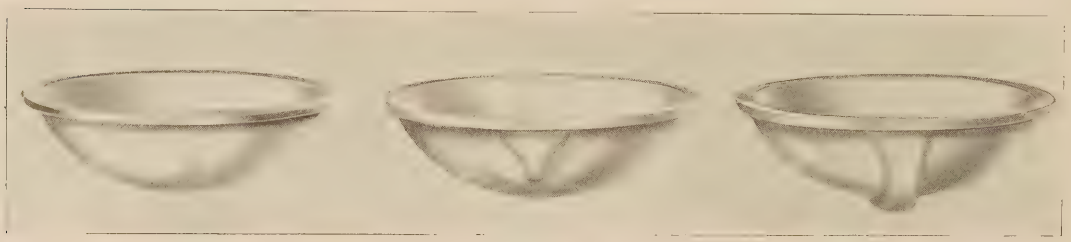
Round Basins, Common Overflow.

Outside Diameter	12	13	14	15	16
Each	1.00	1.00	1.00	1.50	2.00

Round Basins, Patent Overflow.

Outside Diameter	12	13	14	15	16
Each	1.25	1.25	1.25	2.00	2.50

Oval Basins.



OVAL, NO OVERFLOW. OVAL, COMMON OVERFLOW. OVAL, PATENT OVERFLOW.

Oval Basins, No Overflow.

Size	14 x 17	15 x 19	16 x 21
Each	2.50	3.50	4.50

Oval Basins, Common Overflow.

Size	14 x 17	15 x 19	16 x 21
Each	2.50	3.50	4.50

Oval Basins, Patent Overflow.

Size	14 x 17	15 x 19	16 x 21
Each	3.00	4.00	5.00

Tanks, Pulls and Seats.



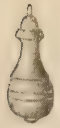
WATER CLOSET TANK.
Round Corner Oak Finish.

	Dimensions.	Gals.	Plain Valve.	Siphon Valve.
Round Cor'd Tank,	17x 8x10	5½	7.00	7.40
" "	20x 9x10	7½	7.75	8.40
" "	23x11x10	10	8.25	9.00



PLAIN PINE TANK.
Copper Lined.

	Dimensions.	Gals.	Plain Valve.	Siphon Valve.
Plain Pine Tank,	17x 8x 9	5	6.00	6.40
" "	18x10x 9	7	6.65	7.30
" "	23x11x10	10	7.10	7.85



No. 10.
CLOSET PULL.
Natural and Red Cherry, Ash, Natural and Antique Oak and Black Walnut.
No. 10, per gross ---- 6.00



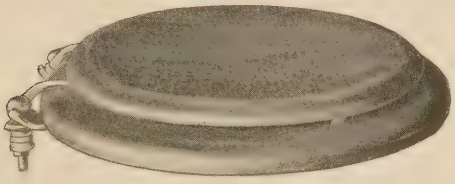
No. 3.
CLOSET PULL.
Natural and Red Cherry, Ash, Natural and Antique Oak and Black Walnut.
No. 3, per gross---- 16.00



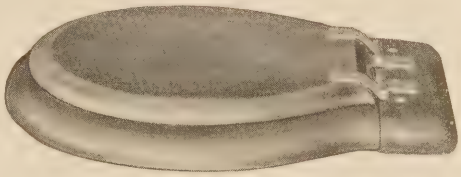
No. 4.
SPECIAL CLOSET PULL.
Natural and Red Cherry, Ash, Natural and Antique Oak and Black Walnut.
No. 4, per gross--- 24.00



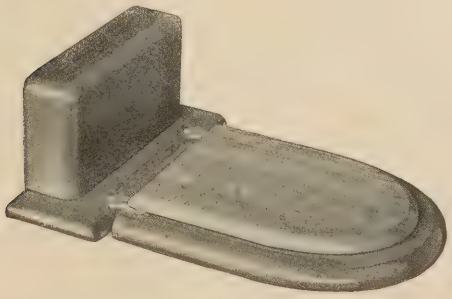
No. 3.
CELLULOID CLOSET PULL.
No. 3, per dozen---- 6.00



No. 675.
HARDWOOD SEAT.
With Seat Attachment. Oak Finish.
Seat, 1¼-inch thick, each ---------- 4.50



No. 575.
HARDWOOD SEAT AND COVER.
With Seat Attachment. Oak Finish.
Seat, 1¼-inch thick, each ---------- 3.00

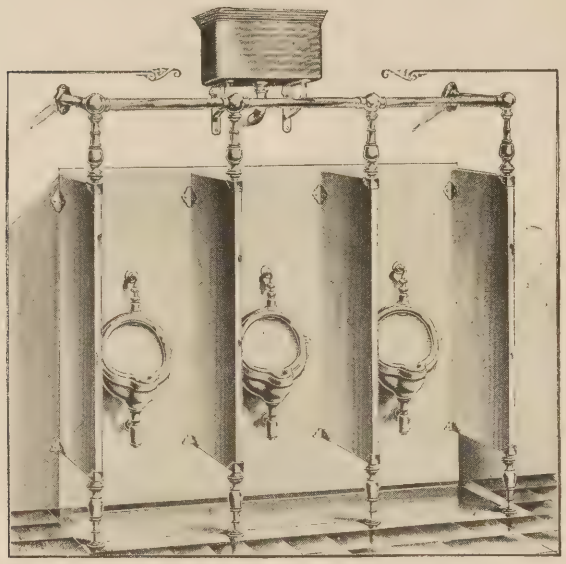


No. 8.
SEAT, BACK AND COVER.
Oak Finish.
No. 6. 1¼-inch Seat and Back---------- 2.80
No. 8. 1¼ " " and Cover ---- 3.50



No. 10.
HOPPER SEAT.
No. 10. Hopper Seat ---------- 2.50
Add for No. 2 Legs as shown---------- .50
Above Seat is slotted to take enameled drip tray, if desired.

The Nason Marble Urinal Stalls.



MARBLE URINAL STALL.

Three-Stall Marble Urinal, with ⅞-inch Italian marble partitions, polished on both sides, ⅞-inch Italian marble back, polished on one side, and 2-inch countersunk marble base, fitted with three polished brass inlet connections, three No. 2 lipped Urinals and three polished brass Urinal Traps. Two-gallon Oak Automatic Flushing Tank with brass brackets and brass flush pipe. Partitions are supported on brass clamps and brass standards, and have ornamental top railing as shown. All brass work is polished.

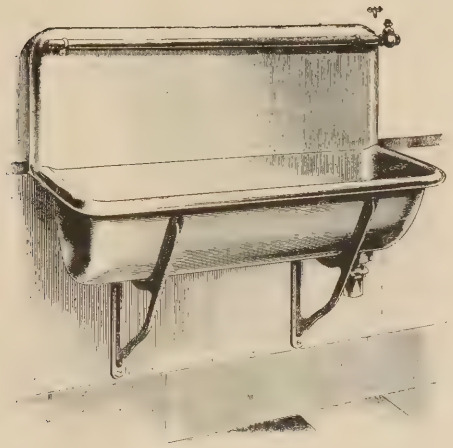
DIMENSIONS: Height from floor to top of partition, 5 feet, 5½ feet or 6 feet; width from center to center of partitions, 2 feet; depth of partitions, 1 foot 10 inches; standards supporting partitions, 12 inches high; base, 2 feet wide. Top railing on 5-foot stalls is 6 feet 6 inches high from floor; on 5½-foot stalls, 6 feet 6 inches, and on 6-foot stalls 7 feet from floor.

	Height, 5 ft.	Height, 5 ft. 6 in.	Height, 6 ft.
3 Stall Marble Urinal, complete as described	190.00	200.00	210.00
4 " " " fitted complete as described, with 3 gallon Aut. Tank	245.00	255.00	270.00
5 " " " " " " " " 3 " " "	300.00	315.00	330.00
6 " " " " " " " " 4 " " "	355.00	370.00	385.00
7 " " " " " " " " 4 " " "	410.00	430.00	450.00
8 " " " " " " " " 6 " " "	460.00	485.00	510.00
9 " " " " " " " " 6 " " "	515.00	545.00	575.00
10 " " " " " " " " 8 " " "	575.00	605.00	635.00
2 " " " " " " " " 2 " " "	140.00	150.00	160.00

If Brass Work is furnished Nickel Plated, add for each stall 2.50

Can be furnished special sizes to order, also with space behind back for connecting pipes. When one end of stall finishes against wall the end partition and brass is connected to floor.

The Nason Cast Iron Public Urinals.



Style A.

Style A.—Cast Iron Roll Rim Urinal and Back, with Brass Beehive Strainer, Plug, Coupling and Perforated Flush Pipe, with loose Key Stop.

Dimensions.—Depth of urinal, 7½ inches; front to back inside, 9½ inches; front to back over all, 12 inches; back, 10 inches high.

Sizes and Prices.

	Complete as described.		
Flush Pipe	Galv.	Galv.	Brass.
Urinal	Painted.	Galv.	Enam.
*2 ft. 0 in	7.25	10.25	15.00
*2 " 6 "	8.00	11.25	16.50
*3 " 0 "	9.25	13.00	19.00
*3 " 6 "	10.50	15.25	22.50
*4 " 0 "	12.50	18.00	25.00
*5 " 0 "	15.75	26.25	34.00
6 " 0 "	19.75	32.25	41.25
7 " 0 "	22.65	37.00	47.25
8 " 0 "	26.00	42.50	54.50
9 " 0 "	29.25	47.00	61.25
10 " 0 "	32.50	52.50	68.25
12 " 0 "	39.25	63.50	81.75

Extras.

Brackets	Painted.	Galv.	Enam.
Price each	.50	.75	.75

Style B.—Cast Iron Roll Rim Urinal and Back, with Brass Beehive Strainer, Plug and Coupling.

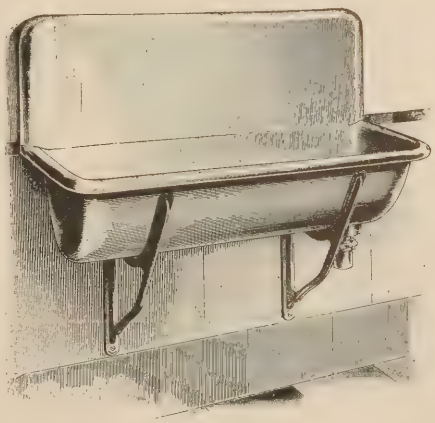
Dimensions.—Same as Style A.

Sizes and Prices.

	Complete as described.		
Urinal	Painted.	Galv.	Enam.
*2 ft. 0 in	5.00	8.00	12.00
*2 " 6 "	5.50	8.75	13.00
*3 " 0 "	6.25	10.00	15.00
*3 " 6 "	7.25	12.00	18.00
*4 " 0 "	8.50	14.00	20.00
*5 " 0 "	11.00	21.50	28.00
6 " 0 "	14.00	26.50	34.00
7 " 0 "	16.00	31.00	39.00
8 " 0 "	18.50	35.50	45.00
9 " 0 "	20.75	40.00	50.50
10 " 0 "	23.00	44.50	56.25
12 " 0 "	27.75	53.50	67.50

Extras.

Brackets	Painted.	Galv.	Enam.
Price each	.50	.75	.75



Style B.

* Cast in one piece. Urinals over 5 feet in length are made in two or more pieces and well bolted together. Any urinal listed can be furnished with outlet on left hand end, but will invariably be sent on right side, as shown, unless otherwise specified.

The Nason Cast Iron Closet Ranges and Urinals.

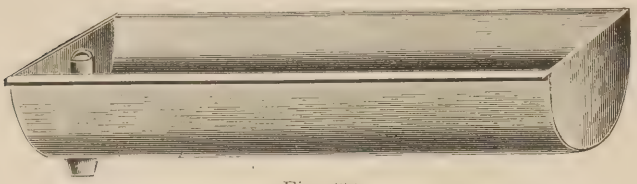


Fig. 238.

PRIVY SINK OR WATER CLOSET RANGE WITH OVERFLOW PLUG.

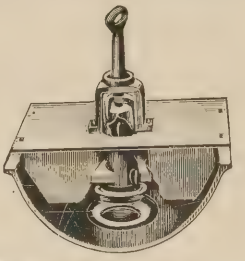


Fig. 239.

SECTIONAL VIEW SHOWING LEVER ATTACHMENT.

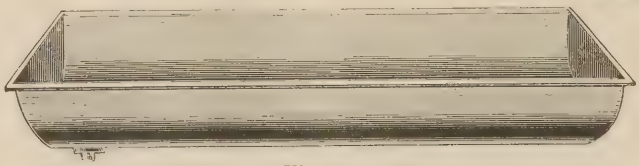


Fig. 240.

DOUBLE PRIVY SINK OR WATER CLOSET RANGE WITH OVERFLOW PLUG.

Privy Sink or Closet Range, Fig. 238.

Length, feet	4	4½	5	6	7	8	9	10	11
Width, inches	17	17	17	17	17	17	17	17	17
Depth, inches	12	12	12	12	12	14	14	14	14
Each	16.00	17.00	18.00	20.00	25.00	28.00	34.00	37.00	40.00
Length, feet	12	13	14	15	16	17	18	19	20
Width, inches	17	17	17	17	17	17	17	17	17
Depth, inches	14	14	14	14	14	14	14	14	14
Each	43.00	50.00	53.00	56.00	59.00	62.00	70.00	73.00	80.00

Double Privy Sink or Closet Range, Fig. 240.

Length, feet	5	6	7	8	9	10	11	12	13	14	15	16	17
Width, inches	31	31	31	31	31	31	31	31	31	31	31	31	31
Depth, inches	14	14	14	14	14	14	14	14	14	14	14	14	14
Each	26.00	30.00	38.00	42.00	46.00	50.00	54.00	58.00	75.00	79.00	83.00	87.00	91.00

ADDITIONS, FIG. 238.

Add for Lever Attachment	4.00
" " Overflow Plugs	2.50
" " Rubber Washers, net	.25
" " Lever Attachment, Single	6.50
" " " " Double	7.50
" " Grates for Single Privy Sink	1.50

ADDITIONS, FIG. 240.

Add for Lever Attachment	5.00
" " " " Single	6.50
" " " " Double	7.50
" " Grates for Double Privy Sinks	3.00

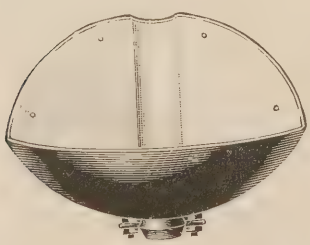
Figs. 238 and 240 made to order of any length. Lengths over 12 feet are made in two sections.

New Pattern Privy Sink.

24 inches wide with gutter, 12½ inches deep at outlet.

Length, ft.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Each	23.00	25.00	28.00	33.00	37.00	41.00	45.00	49.00	53.00	65.00	69.00	73.00	77.00	81.00	85.00

Add for grates for New Pattern Privy Seats 2.00. Lengths over 12 feet are made in two sections.



Corner Urinals.

With or Without Opening Behind for Pipe.

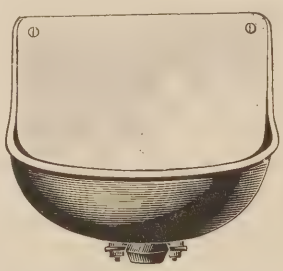
No.	Sizes.	Plain.	Galva-nized.	Enam-eled.
1	9 in. long on sides	1.00	1.70	2.25
2	10 " " "	1.10	1.85	2.40
3	11 " " "	1.20	2.25	2.75
4	12 " " "	1.35	2.75	3.25



Public Urinals.

No.	Sizes.	Plain.	Galva-nized.	Enam-eled.
1	30 in. long on back	6.00	11.00	15.00
2	36 " " "	7.00	12.00	17.00
3	42 " " "	8.00	15.00	21.00
4	48 " " "	9.00	18.00	25.00

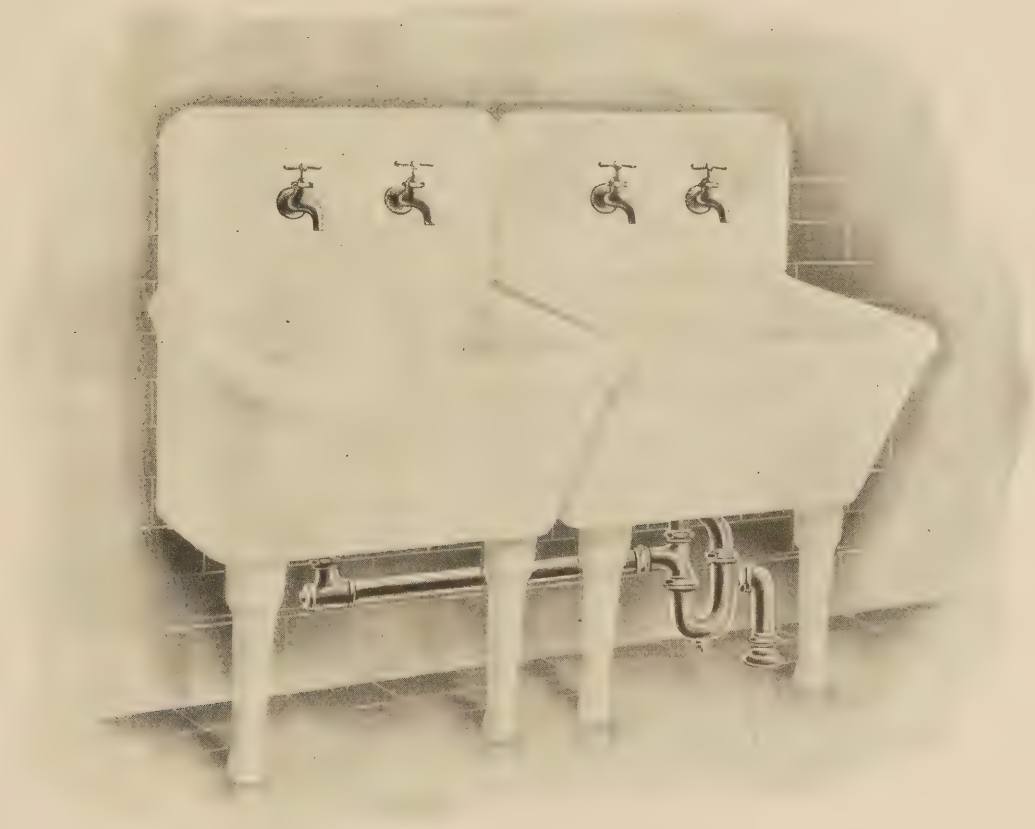
Can be furnished with either Right Hand or Left Hand Wastes.



Half-Round Urinals.

No.	Sizes.	Plain.	Galva-nized.	Enam-eled.
1	12 in. long on back	1.00	2.00	2.50
2	15 " " "	1.30	2.50	3.00

The Nason Porcelain Roll Rim Wash Trays.



THE NASON PORCELAIN ROLL RIM WASH TRAYS.

Three-Quarter Roll Rim White Imperishable Porcelain Wash Trays with Porcelain Legs and Porcelain Backs.

	Length Outside.	Width Outside.	Depth Inside.
Size 1	24 inches	24 inches	15 inches
" 2	26 "	24 "	15 "
" 3	29 "	24 "	15 "

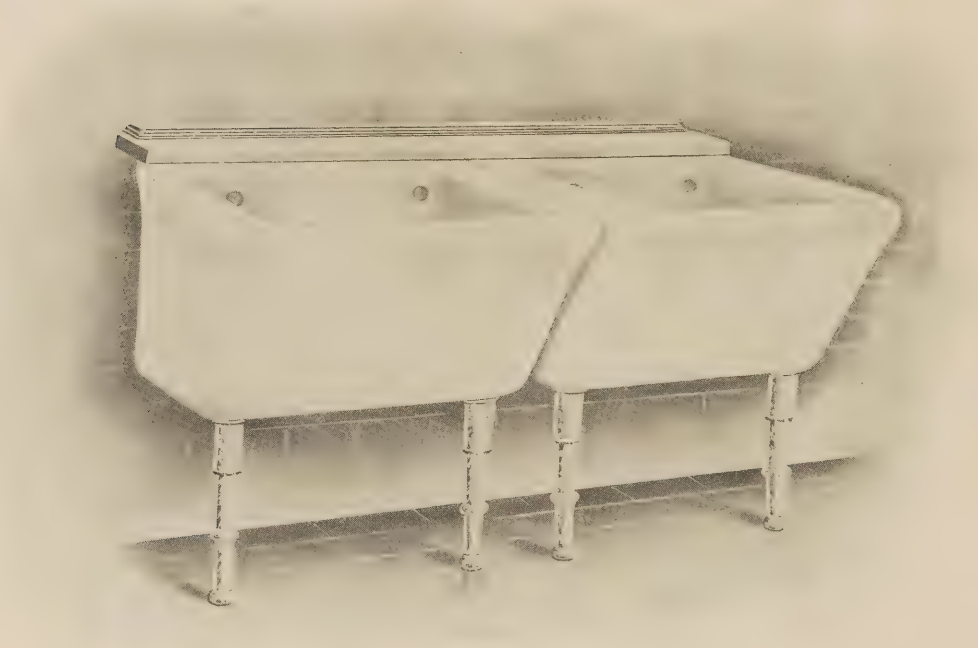
	Per Set of Two.			Per Set of Three.			Per Set of Four.		
Size	1	2	3	1	2	3	1	2	3
Class A	67.00	69.00	72.00	100.00	103.00	107.50	134.00	138.00	144.00
" B	47.00	49.00	52.00	71.00	74.00	78.50	95.00	99.00	105.00
" C	40.00	42.00	45.00	60.00	63.00	67.50	80.00	84.00	90.00

If with Galvanized Legs, deduct from each single Tub, Class A 4.50
" " " " " B and C 2.00

Above lists include 1½-inch nickel plated brass plug and coupling. Bibbs extra.

	Per Set of Two.	Three	Four
Rough Brass 1½-inch Waste Pipe and 2-inch Trap, extra	12.00	14.00	17.00
" 2 " " 2 "	14.50	18.75	23.00
Nickel Plated 1½ " " 2 "	18.00	20.50	25.00
" 2 " " 2 "	21.00	24.00	32.00

The Nason Porcelain Roll Rim Wash Trays.



THE NASON PORCELAIN ROLL RIM WASH TRAYS.

Three-quarter Roll Rim White Imperishable Porcelain Wash Tray, with Galvanized Legs and Ash Cap.

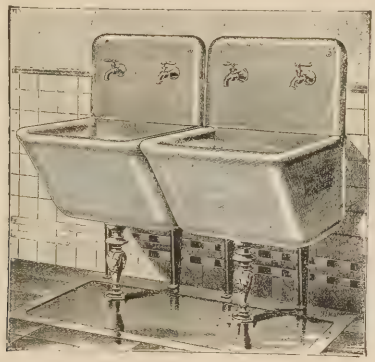
	Length Outside.	Width Outside.	Depth Inside.
Size 1	24 inches	24 inches	15 inches
" 2	26 "	24 "	15 "
" 3	29 "	24 "	15 "

	Per Set of Two.			Per Set of Three.			Per Set of Four.		
Size	1	2	3	1	2	3	1	2	3
Class A	50.50	52.50	54.50	75.00	78.00	81.00	100.00	104.00	108.00
" B	39.00	41.00	43.00	58.00	61.00	64.00	76.00	80.00	84.00
" C	32.00	34.00	36.00	46.80	49.80	52.80	64.00	68.00	72.00

If with Porcelain Legs, add for each Single Tub, Class A 4.50
" " " " B 2.00
" " " " C 2.00

NOTE.—Above lists include 1½-inch nickel plated brass plug and couplings Bibbs extra.

The Nason Roll Rim Vitrified Brown Glazed Wash Trays.



BROWN GLAZED WASH TRAYS, WITH BACKS.

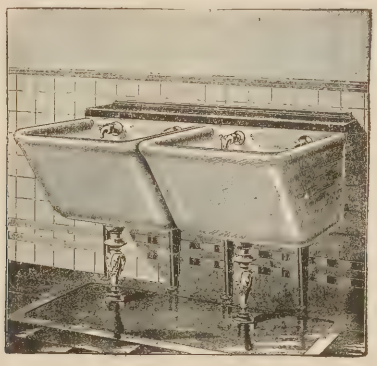
Roll Rim Vitrified Brown Glazed Wash Trays.

	Class A.	Class B.
Set of 2 Trays including Bronzed Iron Standard	27.50	20.50
" 3 " " " " "	41.25	30.75
" 4 " " " " "	55.00	41.00
Brass Strainer and Bolts, Plain, each	.25	
" " " " Nickel Plated, each	.35	
" " Plug and Coupling, Plain, each	.55	
" " " " " Nickel Plated, each	.70	

OUTSIDE DIMENSIONS.

Length, 30 in.	Width, 24½ in.	Depth, 17 in.
" 24 in.	" 24½ in.	" 17 in.

Prices for above Trays include Back of Same Material.



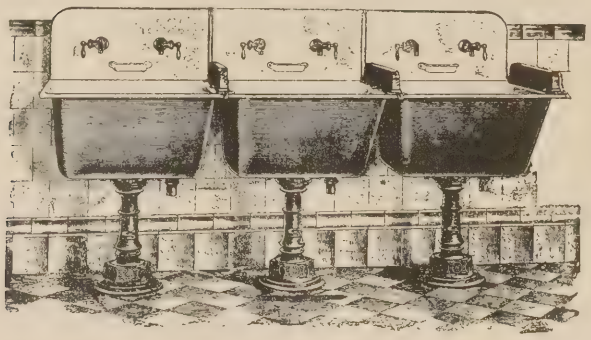
BROWN GLAZED TRAYS, WITH ASH CAP.

Roll Rim Vitrified Brown Glazed Wash Trays.

	Class A.	Class B.
Set of 2 Trays including Bronzed Iron Standard	21.00	14.00
" 3 " " " " "	31.50	21.00
" 4 " " " " "	42.00	28.00

Ash Caps for 2 Trays..... 2.00 3 Trays..... 2.50 4 Trays..... 3.00

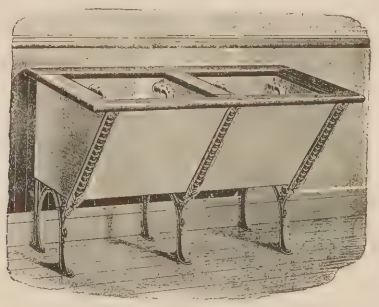
The Nason Enameled Iron Wash Trays.



The Nason Enameled Iron Laundry Trays, with Enameled Flat Rims, Enameled Iron Soap Cups, Nickel Plated Brass Union Strips, with Wringer Holders (Patented), 12-inch Backs. Nickel Plated Waste Plugs with Rubber Stoppers.

Price, as described, less Bibbs, per Set of 2 Trays	40.00
" " " " 3 "	60.00
If with Patent Overflow, add, each	1.25
" Nickel Plated Fuller Bibbs, add, each	1.15
Rough Brass Continuous Waste, for 2 part Trays, extra	5.00
" " 3 " "	7.50
" Trap with Vent, extra	5.00

The Nason Porcelain Flat Rim Wash Trays.



White Porcelain Trays.

	Class A.	Class B.
Set of 2 Trays, Galvanized Iron Legs and Ash Frame	25.00	18.25
" 3 " " " " " " "	37.50	27.50
" 4 " " " " " " "	50.00	36.50

Vitrified Brown Glazed Trays.

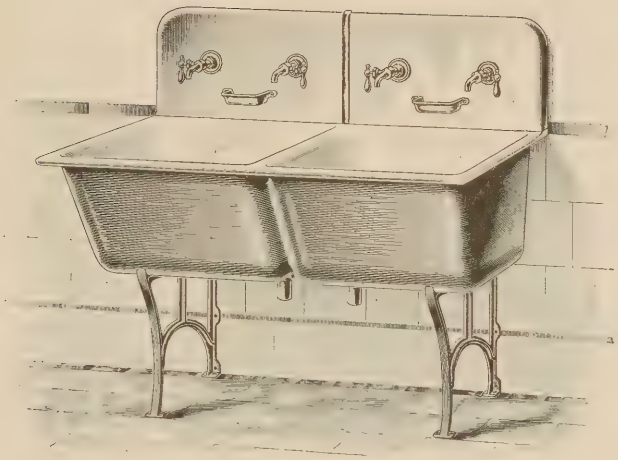
	Class A.	Class B.
Set of 2 Trays, Bronzed Iron Legs and Ash Frame	16.25	12.15
" 3 " " " " " " "	24.35	18.35
" 4 " " " " " " "	32.50	24.50

Outside Dimensions, White Porcelain and Brown Glazed Trays.

Length, 28½ inches.	Width, 24½ inches.	Depth, 16½ inches.
" 26 "	" 24½ "	" 16½ "
" 24 "	" 24½ "	" 16½ "

All Trays Subject to Extra Charge for Crating.

The Nason "Duplex" Porcelain Enameled Laundry Tub.



DUPLEX PORCELAIN ENAMELED LAUNDRY TUB.

In designing the Nason "Duplex" Laundry Tub shown in this illustration the object has been to produce a neat, compact and durable Laundry Tub, moderate in price but embodying all the desirable features necessary to the construction of a strictly high-grade Enameled Rim Laundry Tub.

In the "Duplex" the bodies of the two Tubs are cast in one piece, thus affording all the advantages of a two-part Laundry Tub with the sacrifice of the least possible space.

The difficulty experienced in attaching the wringer has also been done away with by making it possible to use an ordinary wringer without any device for securing it to the Tub.

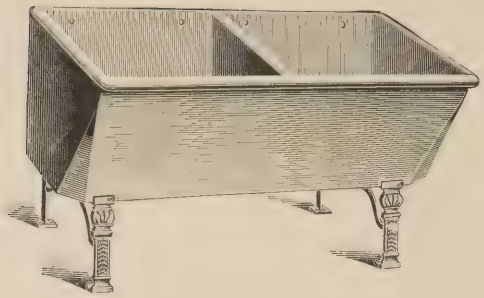
The Tubs are each 25 x 25 x 15 inches deep and are supported on neat and substantial iron frames.

If furnished without backs, Soap Cups and Bibbs may be placed inside the body of the Tubs.

Back is 12 inches high and fitted with Nickel Plated Brass Union Strip.

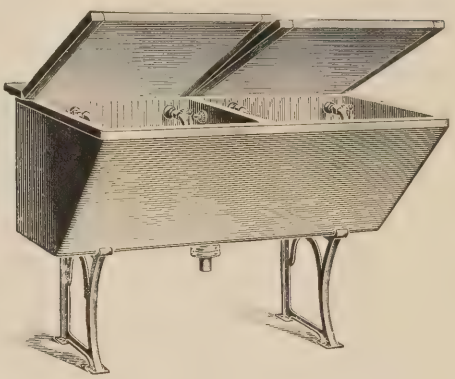
Enameled, with Backs, less Bibbs	31.50
" without Backs, less Bibbs	25.00
Add for Bibbs, each	1.15

Wash Trays.



SCOTCH GRANITE ROLL RIM WASH TRAYS.

Single,	25 x 24,	Tub and Plug	8.50
"	27 x 24,	"	10.00
"	31 x 24,	"	11.50
2 Part,	48 x 22,	"	15.00
"	48 x 24,	"	15.00
"	53 x 24,	"	17.00
"	60 x 24,	"	21.00
3 Part,	72 x 24,	"	25.00
Single,	25 x 24,	including Cover and Legs	10.00
"	27 x 24,	" "	11.50
"	31 x 24,	" "	13.00
2 Part,	48 x 22,	" "	17.00
"	48 x 24,	" "	17.00
"	53 x 24,	" "	19.00
"	60 x 24,	" "	23.00
3 Part,	72 x 24,	" "	28.00

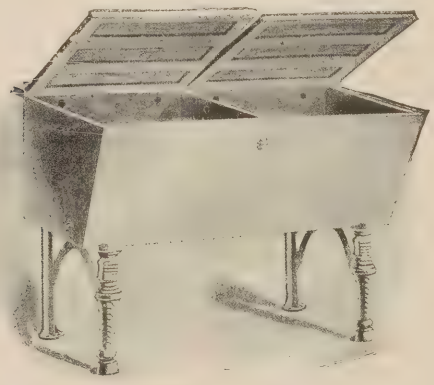


WEEHAWKEN GRANITE WASH TRAYS.

With Overflow and Waste Connections.

Single,	25 x 21	9.00
"	25 x 24	9.50
"	27 x 24	10.00
"	31 x 24	12.00
2 Part,	48 x 21	14.50
"	48 x 24	17.50
"	53 x 24	18.50
"	60 x 24	19.50
3 Part,	72 x 21	25.00
"	72 x 24	29.50
"	80 x 24	30.00
"	90 x 24	32.00

1¼ ash and pine wood panel covers, 1 Part, 1.75; 2 Part, 3.50; 3 Part, 5.25. Legs, plain, .70 each; painted, .75 each; galvanized. 1.25 each.



SOAPSTONE WASH TRAYS.

Complete with Covers, Legs and Plugs.

Single,	24 x 24	14.00
"	30 x 24	16.00
"	36 x 24	18.00
2 Part,	42 x 24	22.00
"	44 x 24	22.00
"	46 x 24	22.00
"	48 x 24	22.00
"	54 x 24	27.50
"	60 x 24	35.00
3 Part,	72 x 24	43.00
"	78 x 24	49.00
"	84 x 24	58.00
"	90 x 24	65.00
"	96 x 24	75.00

If with galvanized legs instead of painted
Add for either Single or 2 Part Tubs ..... .50
" " 3 or 4 " ..... .75



SLATE WASH TRAYS.

Complete with Covers, Legs and Plugs.

Single,	24 x 23	12.00
"	28 x 23	14.00
2 Part,	48 x 23	17.00
"	54 x 23	21.50
"	60 x 23	26.00
3 Part,	72 x 23	32.50
"	78 x 23	37.50
"	84 x 23	45.00
"	90 x 23	54.00
"	96 x 23	63.00

All the above Tubs are subject to an extra charge for crating.

The Nason Porcelain Roll Rim Kitchen Sink.



The Nason Porcelain Roll Rim Kitchen Sink with Nickel Plated "Success" Standing Waste, Nickel Plated Legs, Nickel Plated ¾-inch Fuller Faucets, Nickel Plated ¾-inch Supply Pipes with Air Chambers, and Nickel Plated 2-inch Trap, Pipes to floor.

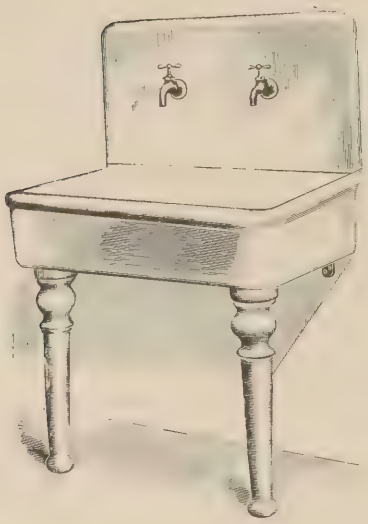
Dimensions.		Class A.	Class B.	Class C.
30 x 20 x 7.	Complete as shown	42.50	39.50	37.00
36 x 24 x 7.	" "	46.50	42.50	40.00
42 x 24 x 7.	" "	54.50	50.00	46 50
48 x 24 x 7	" "	62.00	56.00	52.00

If with Bronzed Iron Legs, deduct, per pair 4.00

" Porcelain " add " 4.00

Dimensions given are outside, except depth, which is inside.

The Nason Porcelain Roll Rim Kitchen Sinks.



WHITE KITCHEN SINK.

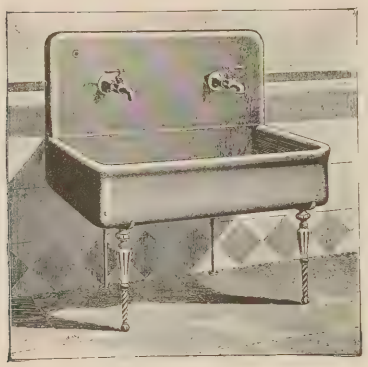
The Nason Porcelain Roll Rim Kitchen Sink, with Porcelain Back, Porcelain Legs.

Length Outside. Inches.	Width Outside. Inches.	Depth Inside. Inches.	Back Height. Inches.	Sinks Only. Class A.	Sinks Only. Class B.	Sinks Only. Class C.	Backs Only. Class A.	Backs Only. Class B.	Backs Only. Class C.
24	17	6	15	12.00	8.40	6.00	5.50	3.85	2.75
30	20	7	15	18.00	13.00	9.00	7.00	4.90	3.50
36	23	7	15	22.00	15.40	11.00	8.00	5.60	4.00
42	24	7	18	29.00	20.30	14.50	10.00	7.00	5.00
48	24	7	18	36.00	25.20	18.00	12.00	8.40	6.00

Nickel Plated Legs, per pair	10.00
Galvanized Iron Legs, per pair	5.00
White Enamel Iron Painted Legs, per pair	5.50
Bronze Iron Legs, per pair	4.50
Solid Porcelain Legs, per pair, complete, Class A	12.00
" " " " B	10.00

All the above with Iron Braces.

Above list does not include Bibbs.



BROWN GLAZED KITCHEN SINK.

Roll Rim Vitrified Brown Glazed Kitchen Sinks.

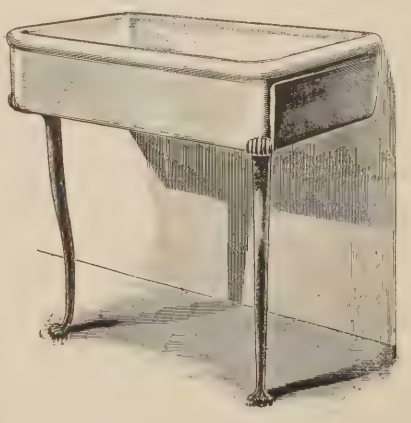
With Bronzed Iron Legs.	Class A.	Class B.		Class A.
24 x 18 x 8	7.50	6.00	Add for Back	2.50
30 x 18 x 8	9.00	7.50	"	3.25
36 x 22 x 8	10.50	8.50	"	4.00
42 x 22 x 8	13.25	10.50	"	4.75
48 x 22 x 8	16.75	13.25	"	6.00

The Nason Porcelain Kitchen Sink.

All Roll Rim Sinks are usually set up against a Marble or Slate Slab extending down to floor, and are thus absolutely clean and perfectly sanitary.

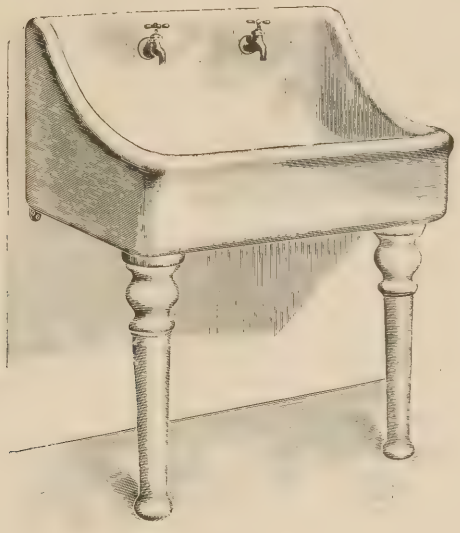
Length Outside.	Width Outside.	Depth Inside.	Class A.	Class B.	Class C
24 inches	17 inches	6 inches	12.00	8.40	6.00
30 "	20 "	7 "	18.00	13.00	9.00
36 "	23 "	7 "	22.00	15.40	11.00
42 "	24 "	7 "	29.00	20.30	14.50
48 "	24 "	7 "	36.00	25.20	18.00

Nickel Plated Offset and Patent Extension Legs, per pair	10.00
Galvanized Iron " " " " "	5.00
Nickel Plated Plug and Coupling	2.50
" " Strainer and Coupling	2.50



WHITE KITCHEN SINK.

The Nason Porcelain High-Back Roll-Rim Integral Kitchen Sink.



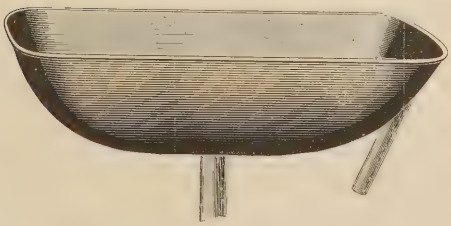
The Nason Porcelain High-Back Roll-Rim Integral Kitchen Sink with Porcelain Legs.

Length Outside.	Width Outside.	Depth Inside.	Sink Only. Class A.	Class B.	Class C.
30 inches.	21½ inches.	7 inches	30.00	21.00	15.00
36 "	24 "	7 "	35.00	24.50	17.00
42 "	24 "	7 "	45.00	31.50	22.50

Height of Back (outside), 19 inches.
Above prices do not include Bibbs.

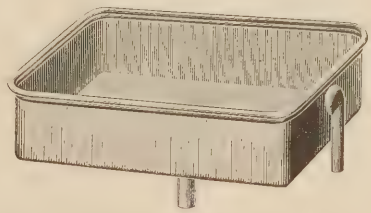
	Class A.	Class B.	
Solid Porcelain Legs, per pair	12.00	10.00	
Nickel Plated Offset Extension Legs, per pair			10.00
Galvanized Legs, per pair			5.50
Bronzed Iron Legs, per pair			4.50
Nickel Plated Strainer and Coupling			2.50
Nickel Plated Plug and Coupling			2.50

Copper Pantry Sinks.



OVAL BOTTOM COPPER PANTRY SINK.

Size, inches	12 x 18	12 x 20	14 x 16	14 x 20
Each	6.00	6.50	6.00	7.50
Size, inches	14 x 24	16 x 24	16 x 30	18 x 30
Each	9.00	10.00	12.00	13.00



SQUARE BOTTOM COPPER PANTRY SINK.

Size, inches	12 x 18	12 x 20	14 x 16	14 x 20
Each	4.50	5.00	4.50	6.00
Size, inches	14 x 24	16 x 24	16 x 30	18 x 30
Each	7.00	8.00	10 00	11.00

The Nason Porcelain Kitchen and Pantry Sinks.

Porcelain Roll Rim Recess Kitchen Sink.

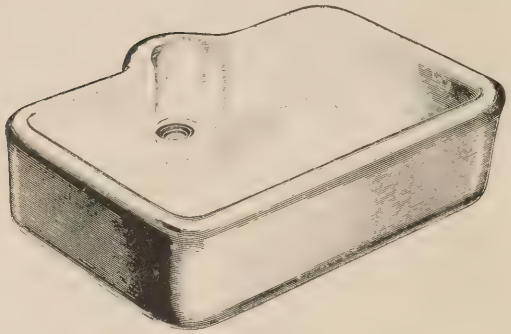


Fig. 248.

Size.	Length Outside. Inches.	Width Outside, exclusive of Recess. Inches.	Depth Inside. Inches.	Class A.	Class B.	Class C.
No. 1	30	20	7	20.00	14.00	10.00
" 2	36	24	7	25.00	17.50	12.50
" 3	42	24	7	32.00	22.40	16.00
" 4	48	24	7	40.00	28.80	20.00

Porcelain Flat Rim Recess Pantry Sink.

Size.	Length Outside. Inches.	Width Outside. Inches.	Depth Inside Inches.	Class A.	Class B.	Class C.
No. 1	24	17	6	10.00	7.00	5.00
" 2	28	17	6	12.00	9.60	6.00
" 3	30	20	7	14.00	10.00	7.00

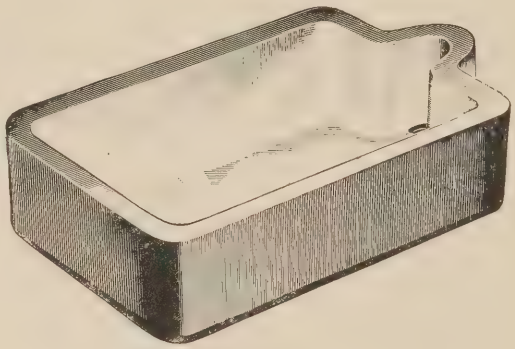


Fig. 257.

Porcelain Flat Rim Pantry Sink.



Fig. 256.

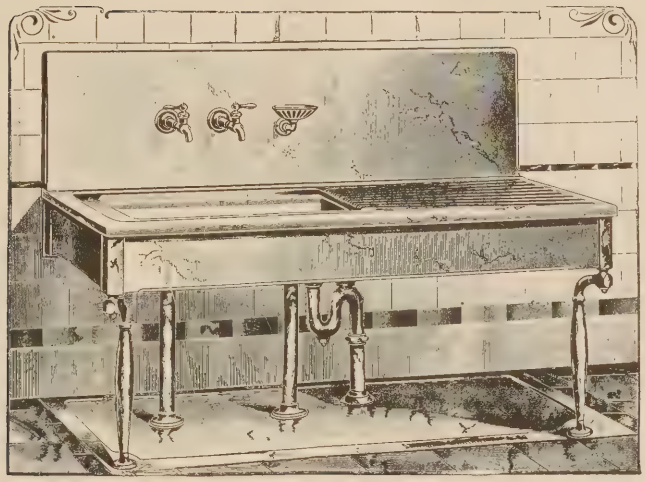
Size.	Length Outside. Inches.	Width Outside. Inches.	Depth Inside. Inches.	Class A.	Class B.	Class C.
No. 1	20	14	5	6.00	4.20	3.00
" 2	23	16	6	8.00	5.60	4.00
" 3	24	17	6	9.00	7.50	5.00
" 4	28	17	6	11.00	10.00	7.00
" 5	30	20	7	13.00	----	----

Extra Deep Pantry Sink.

	Length Outside. Inches.	Width Outside. Inches.	Depth Inside. Inches.	Class A.	Class B.	Class C.
No. 1	28	18	10	13.00	10.00	7.00
" 2	30	20	10	16.00	11.50	8.00

The Nason Porcelain Pantry Sink.

The "Juliette."



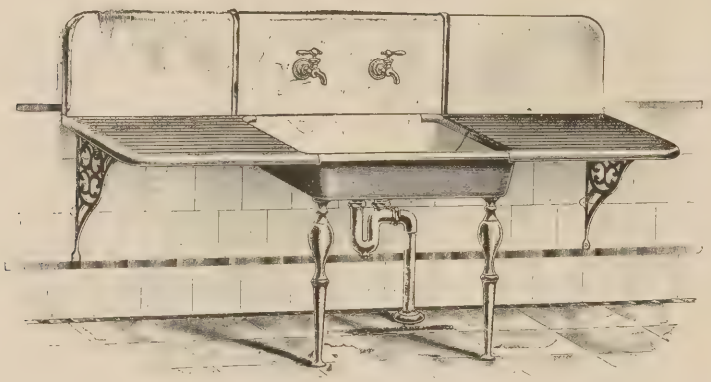
The Nason Porcelain Pantry Sink, with 1¼-inch Countersunk Marble Top with Right Hand Drain Board; ⅞-inch Marble Back and 8-inch Aprons on Front and Ends; two Nickel Plated Heavy Cast Brass Sink Legs; two Nickel Plated Brass Apron Supports; 1½-inch Nickel Plated Brass Trap, Vented; Nickel Plated Overflow Strainer and Overflow Connection; Nickel Plated Adjustable Brass Sink Support with Wrought Iron Frame; two Nickel Plated Fuller Pantry Faucets and Soap Dish.

Size of Sink.	Height of Back.	Length of Drain Board.	Length of Slab.	Width of Slab.	Price, as described. Italian Marble.
30 x 20 in.	20 in.	30 in.	5 ft. 0 in.	2 ft. 1 in.	105.00
36 x 23 in.	20 in.	30 in.	6 ft. 0 in.	2 ft. 4 in.	130.00
42 x 22 in.	20 in.	30 in.	6 ft. 6 in.	2 ft. 3 in.	140.00
48 x 24 in.	20 in.	30 in.	7 ft. 0 in.	2 ft. 5 in.	160.00

If with Nickel Plated Standing Overflow, add---------- 3.50

Can be furnished with Left Hand Drain Board if desired.

The Nason Enameled Iron Kitchen Sink.

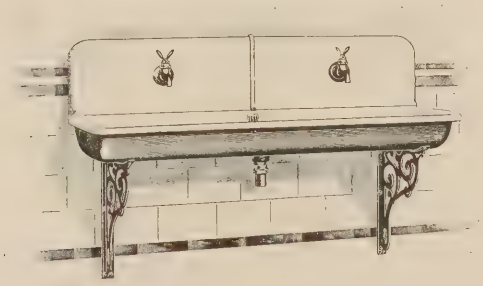


The Nason White Enameled Roll Rim Kitchen Sink, with 15-inch Back, with Concealed Galvanized Air Chambers, Polished Fuller Bibbs, two 18-inch Ash Drain Boards, 1½-inch Rough Brass Vented Trap and Improved Bronzed Iron Legs.

24 x 18	30.25	30 x 20	32.75
30 x 18	31.75	36 x 20	34.25
36 x 18	33.25	40 x 20	35.75

If without 1½-inch Rough Brass Vented Trap, deduct 4.50
If without Ash Drain Boards, deduct 4.00

The Nason Enameled Iron Wash Sink.



The Nason Roll Rim Wash Sink, with 12-inch back, outlet in center, with 1½-inch N. P. Brass Waste Plug with Rubber Stopper, Patent Overflow, with N. P. Brass Overflow Strainer, Enameled Soap Cup, Painted Iron Brackets, with two Doherty Self-Closing Bibbs.

Length over rim, 5 feet; Width over rim, 19½ inches; Depth, 6 inches.

Price as described, Painted	20.00
" " Galvanized	34.00
" " Enameled	36.00

If without Doherty Bibbs, deduct, each 2.00
If with 1½ Rough Brass Trap, with Vent, add 4.50
If with concealed Galvanized Iron Supply Pipe, with Brass Loose Key Stop, add 1.50
If with Standing Overflow, add 2.00

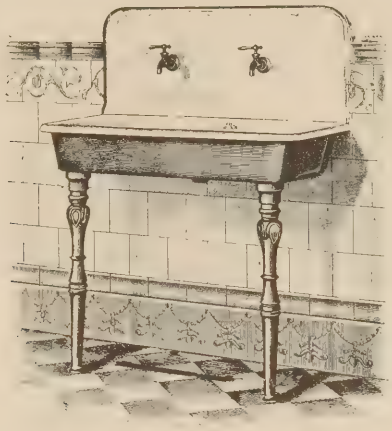
The Nason Enameled Iron Kitchen Sinks.



Style B 1.

White Enameled Roll Rim Kitchen Sink, with 15-inch Back, Concealed Galvanized Air Chambers, Polished Fuller Bibbs, Brass Strainer and Improved Bronzed Iron Brackets.

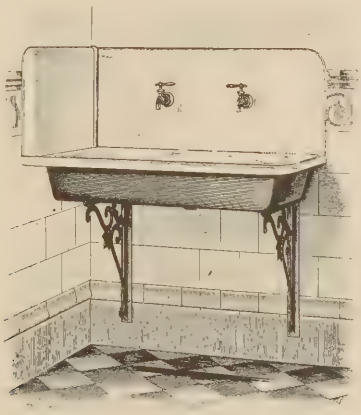
Sizes	24 x 18	30 x 18	36 x 18	30 x 20	36 x 20	40 x 20
Each	14 75	16.25	17.75	17.25	18.75	20.25



Style L 2.

White Enameled Roll Rim Kitchen Sink, with 15-inch Back, Concealed Galvanized Air Chambers, Polished Fuller Bibbs, Brass Strainer and Improved Bronzed Iron Legs.

Sizes	24 x 18	30 x 18	36 x 18	30 x 20	36 x 20	40 x 20
Each	15.75	17.25	18.75	18.25	19.75	21.25

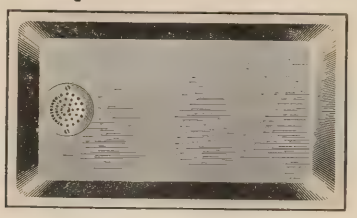


Style B 3.

White Enameled Roll Rim Kitchen Sink, with 15-inch Back and End Piece, Concealed Galvanized Air Chambers, Polished Fuller Bibbs, Brass Strainer and Improved Bronzed Iron Brackets.

24 x 18	17.75
30 x 18	19.25
36 x 18	20.75
30 x 20	20.25
36 x 20	21.75
40 x 20	23.25

Cast Iron Square or Kitchen Sinks.

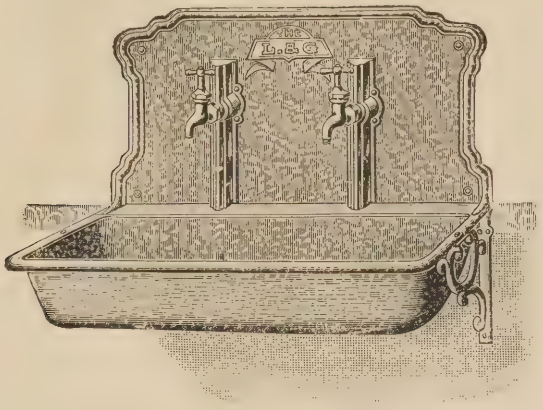


Length. Inches.	Width. Inches.	Depth. Inches.	Plain.	Galvanized.	Enameled.
16	12	6	1.10	2.30	4.50
16	16	6	1.60	3.25	5.25
18	12	6	1.25	2.60	4.75
18	16	6	1.60	3.50	5.75
18	18	6	1.80	3.80	6.00
20	12	6	1.50	3.10	5.25
20	14	6	1 50	3.20	6.00
20	16	6	1.60	3.50	6.25
20	20	6	1.95	4.20	6.75
22	14	6	1.60	3.30	6.00
23	15	6	1.70	3.40	6.25
24	14	6	1 70	3.75	6.25
24	15	6	1.75	3.90	6.40
24	16	6	1.80	4.00	6.50
24	17	6	1.95	4.20	6.75
24	18	6	2.10	4.30	7.00
24	20	6	2.40	5.00	7.50
25½	15½	6	1.75	3.60	6.50
25	17	6	2.10	4.30	7.00
27	15	6	2.00	4.25	7.25
28	16	6	2.10	4.50	7.50
28	17	6	2.20	4.50	7.50
28	20	6	2.70	5.50	8.00
30	12	6	2.00	4.25	7.25
30	16	6	2.25	4.75	7.75
30	18	6	2 50	5.10	8 50
30	20	6	3.00	6.25	9.00
32	18	6	3.00	6.25	9.50
32	21	6	3.40	7.20	9.75
34	20	6	3.00	6.50	9.50
36	16	6	2.75	6.15	8.75
36	18	6	3.00	6.50	9.50
36	20	6	3.70	7.75	10.50
36	21	6	3.70	7.75	10.50
36	22	6	3.70	7.75	10.50
38	19	6	3.80	8.00	11.00
38	20	6	3.80	8.00	11.00
40	20	6	4.00	8.75	11.75
41	22	6	4.25	9.00	12.00
42	18	6	4.25	9.00	12.00
42	20	6	4.25	9.00	12.00
42	22	6	4.25	9.00	12.00
48	20	6	5.30	11.50	13.25
48	22	6	5.75	12.25	15.00
48	23	6	5.75	12.25	15.00
48	24	6	5.75	12.25	15.00
Add for Patent Overflow			1.00	1.00	1.00
" " "		and Plug Strainer	1.20	1.25	1.50

Large or Hotel Sinks.

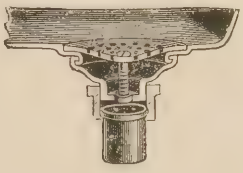
Length. Inches.	Width. Inches.	Depth. Inches.	Plain.	Galvanized.	Enameled
50	24	6½	7.50	16.00	18.00
60	20	6	10.00	21.00	25.00
60	24	6	12.00	25.00	30.00
62	22	8	10.75	22.00	26.00
62	26	8	11.50	24.00	28.00
72	20	6	13.00	26.00	30.00
72	24	6	15.00	31.00	35.00
76	22	7	15 00	32.00	40.00
84	24	6	17.00	----	----
96	24	6	19.00	----	----
108	24	6	21.00	----	----
120	24	6	24.00	----	----
Add for Patent Overflow			1.00	1.00	1.00
" " "		and Plug Strainer	1.20	1.25	1.50

Seamless Wrought Steel Kitchen Sinks and Backs.





CAST IRON COUPLING.



BRASS STRAINER COUPLING.

Sinks Without Backs, With Cast Iron Couplings, Turned Edges.

Order by Number only. State Finish Required.

No	01	01½	02	02½	03	04	05	06
Width, inches	16	18	18	20	18	20	20	20
Length, "	24	24	30	20	36	30	36	40
Depth, "	6	6	6	6	6	6	6	6
Plain, each	1.85	2.10	2.35	2.35	2.85	2.60	3.35	4.10
Painted, inside and out, each	2.10	2.35	2.60	2.60	3.35	3.10	3.85	4.60
Galvanized, " " " "	2.60	2.85	3.35	3.35	4.10	3.85	4.60	5.35
Blue Enameled, inside and out, each	3.60	4.10	4.60	4.60	5.60	5.35	6.35	7.35
Agate " (Gray), inside and out, each	4.60	5.10	5.60	5.60	6.60	6.35	7.35	8.35
Crystal " (Light Gray), " " " "	4.85	5.35	5.85	5.85	6.85	6.60	7.60	8.60
White " (Blue Outside), " " " "	5.35	5.85	6.60	6.60	7.60	7.35	8.35	9.35

For Sinks with Plug Strainers and Rubber Stoppers add .35 to the list.

For Sinks with Cast Iron Couplings threaded for Iron Pipe add .15 to the list.

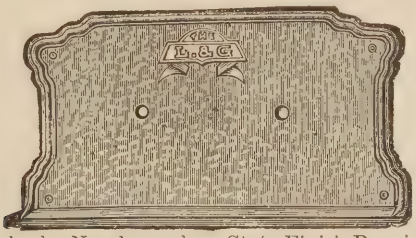
Sinks Without Backs, With Brass Strainer Couplings.

Order by Number only. State Finish Required.

No	010	015	020	025	030	040	050	060
Width, inches	16	18	18	20	18	20	20	20
Length, "	24	24	30	20	36	30	36	40
Depth, "	6	6	6	6	6	6	6	6
Plain, each	2.85	3.10	3.35	3.35	3.85	3.60	4.35	5.10
Painted, inside and out, each	3.10	3.35	3.60	3.60	4.35	4.10	4.85	5.60
Galvanized, " " " "	3.60	3.85	4.35	4.35	5.10	4.85	5.60	6.35
Blue Enameled, inside and out, each	4.60	5.10	5.60	5.60	6.60	6.35	7.35	8.35
Agate " (Gray), inside and out, each	5.60	6.10	6.60	6.60	7.60	7.35	8.35	9.35
Crystal " (Light Gray), " " " "	5.85	6.35	6.85	6.85	7.85	7.60	8.60	9.60
White " (Blue Outside), " " " "	6.35	6.85	7.60	7.60	8.60	8.35	9.35	10.35

Wrought Steel Sink Backs, With and Without Air Chambers.

Threaded for ¾-inch Bibbs.



Order by Number only. State Finish Required.

No	With One Air Chamber. 4	5	7	9	With Two Air Chambers. 8	10	20	30	Without Air Chambers. 0	1	2	3
Width, inches	20	24	30	36	20	24	30	36	20	24	30	36
Plain, each	3.00	3.10	3.25	3.40	5.00	5.10	5.25	5.40	1.00	1.10	1.25	1.40
Painted, "	3.20	3.30	3.60	4.00	5.20	5.30	5.60	6.00	1.20	1.30	1.60	2.00
Galvanized, "	3.60	3.80	4.10	4.50	5.60	5.80	6.10	6.50	1.60	1.80	2.10	2.50
Blue Enameled, each	3.80	4.20	4.60	5.20	5.80	6.20	6.60	7.20	1.90	2.20	2.60	3.20
Agate " (Gray), each	4.00	4.30	4.70	5.30	6.00	6.30	6.70	7.30	2.00	2.30	2.70	3.30
Crystal " (Light Gray), "	4.20	4.50	4.90	5.50	6.20	6.50	6.90	7.50	2.20	2.50	2.90	3.50
White " each	4.50	5.00	5.50	6.25	6.50	7.00	7.75	8.50	2.50	3.00	3.50	4.25

Backs with two holes always supplied unless ordered with one.

Nickel Plated Air Chambers, list .60. Each extra.

Faucets not included in any of above lists.

Cast Iron Sink Backs, Legs and Brackets.



PLAIN KITCHEN SINK BACK.

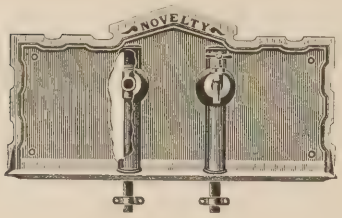


KITCHEN SINK BACK. With Air Chambers, Pipes and Couplings.

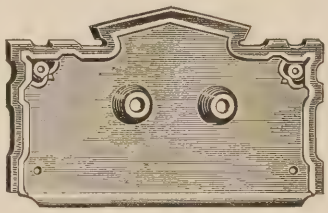
Plain Kitchen Sink Backs.

Size	14	16	18	20	22	23	24	25	27	28	30	32	34	36	38	41	48	50	62	76
Plain	1.05	1.10	1.20	1.25	1.35	1.40	1.50	1.55	1.70	1.80	2.00	2.25	2.50	2.75	3.00	3.50	4.25	5.50	8.00	12.00
Galvanized	1.75	1.90	2.10	2.25	2.50	2.70	2.80	2.90	3.25	3.50	4.00	4.25	4.75	5.00	5.50	6.00	7.00	9.00	12.00	18.00
Enameled	2.75	2.90	3.15	3.25	3.40	3.70	3.70	3.90	4.25	4.75	5.00	5.25	5.75	6.00	6.50	7.00	8.00	11.00	15.00	22.00

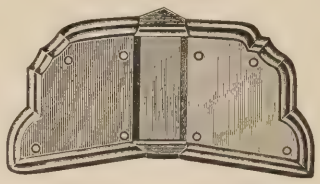
Add for Air Chambers, Plain .... 2.00 Galvanized .... 2.50 Enameled 3.00



NOVELTY SINK BACK.



CENTENNIAL SINK BACK.



CORNER SINK BACK.

Novelty Sink Backs.

Size	16	18	20	22	23	24	25	27	28	30	32	34	36	38	41	42	48
Plain	1.35	1.45	1.50	1.60	1.65	1.75	1.80	1.95	2.05	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.50
Galvanized	2.35	2.35	2.50	2.75	2.95	3.05	3.15	3.50	3.75	4.25	4.50	5.00	5.25	5.75	6.25	6.25	7.25
Enameled	3.50	3.50	3.50	3.65	3.75	3.95	4.50	4.75	5.00	5.25	5.50	6.00	6.25	6.75	7.25	7.25	8.25

Above lists are for Novelty Backs with two Cock Holes. If wanted with only one Cock Hole list is .25 less.

Centennial Sink Backs.

Size	18	18	20	20	24	24	28	28	30	30	36	36
	1 Hole.	2 Hole.	1 Hole.	2 Hole.	1 Hole.	2 Hole.	1 Hole.	2 Hole.	1 Hole.	2 Hole.	1 Hole.	2 Hole.
Plain	1.20	1.45	1.25	1.50	1.50	1.75	1.80	2.05	2.00	2.25	2.75	3.00
Galvanized	2.10	2.35	2.25	2.50	2.80	3.05	3.50	3.75	4.00	4.25	5.00	5.25
Enameled	3.15	3.40	3.25	3.50	3.70	3.95	4.75	5.00	5.00	5.25	6.00	6.25

For Sink Backs with Air Chambers add to above list prices: Plain, 2.00 each; Galvanized, 2.50 each; Enameled, 3.00 each.

Deduct for Pipe and Coupling ..... .50.

Corner Sink Backs.

No.	1	2	3
Size	17	20	22
Plain	2.50	3.00	3 50
Galvanized	4.25	5.00	6.00



SINK LEG.

Plain, each	.50
Galvanized each	1.00



SINK BRACKET.



ADJUSTABLE SINK BRACKET.

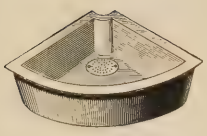
Sink Brackets.

	Plain.	Galvanized.
No. 1. For Sinks up to 18 in. wide	.60	1.00
" 2. " " " 24 "	.75	1.25

Adjustable Sink Brackets.

	Plain.	Galvanized.
No. 1. For Sinks up to 14 in. wide	.50	1.00
" 2. " " " 18 "	.50	1.00
" 3. " " " 24 "	.70	1.25

Cast Iron Sinks.



CORNER SINK.



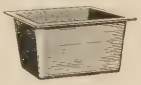
HALF CIRCLE SINK.

Corner Sinks.

No.	Length Side, Inches.	Width, Inches.	Depth, Inches.	Plain.	Galvanized.	Enameled.
1	25	17	6	1.25	2.75	6.00
2	28	20	6	1.75	3.50	7.00
3	31	22	6	2.10	4.20	8.00
Add for Patent Overflow				1.00	1.00	1.00
" " " " and Plug Strainer				1.20	1.25	1.50

Half Circle Sinks.

No.	Length Back, Inches.	Width, Inches.	Depth, Inches.	Plain.	Galvanized.	Enameled.
1	24	14	6	1.50	3 25	6.00
2	27	14	6	1.80	3.90	7.00
3	28	16	6	2.00	4.00	7.75
4	29	17	6	2.00	4.00	7.75
5	31	17	6	2.25	4.75	9.00
Add for Patent Overflow				1.00	1.00	1.00
" " " " and Plug Strainer				1.20	1.25	1.50



SLOP SINK.
With End Outlet.



HOTEL SLOP SINK.
With Round Corners and Center Outlet.

Slop Sinks—With End Outlet.

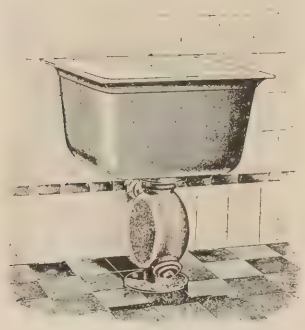
Length, Inches.	Width, Inches.	Depth, Inches.	Outlet, Inches.	Plain.	Galvanized.	Enameled.
16	16	10	2	2.70	5 25	7.50
20	14	12	2	3.50	6.50	8.50
20	16	12	2	4.00	8.25	10.00
23	15	15	2	4.25	8.00	11.00
24	16	12	2	4.50	9.00	11.00
24	20	12	2	5.00	9.50	11.50
30	20	12	2	8.00	15.00	16.00
36	20	12	2	10.00	19.00	20.00
36	24	10	2	11.00	20.00	22.00
36	24	12	2	12.00	20.00	23.00
42	24	12	2	20.00	36.00	38.00
48	20	12	2	13.50	24.00	27.00
48	20	17	2	20.00	36.00	38.00
48	30	12	2	18.00	31.50	39.00
50	24	12	2	24.00	40.00	44.00
60	20	12	2	18.00	31.50	39.00
72	22	12	3	24.00	45.00	52.50

For Patent Overflow on any size Slop Sink with End Outlet, add 1.00 to list price.
For Patent Overflow and Plug Strainer, add 1.25 to list price.

Hotel Slop Sinks—With Round Corners and Center Outlet.

Length, Inches.	Width, Inches.	Depth, Inches.	Outlet, Inches.	Plain.	Galvanized.	Enameled
16	16	10	2	3.25	6.00	8.00
22	20	12	4	5.00	10.00	10.00
24	20	12	4	5.50	11.00	13.50
30	20	12	4	8.00	14.00	17.00
36	20	12	2	10.00	19.00	20.00
36	20	12	4	10.00	19.00	20.00

The Nason Enameled Iron Slop Sinks.



Style A.

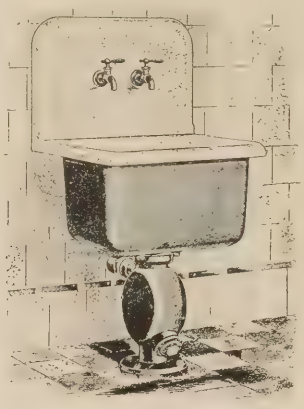
Slop Sink with Trap Standard, with 2-inch Cleanout, Brass Vent Connection and Brass Strainer.

From Wall to Center of Outlet, 20 x 16 -- 8¾ inches
" " " 22 x 20 -- 10¾ "

Price, as described.

	Painted.	Galvanized.	Enameled.
20 x 16 x 12	9.50	12.00	13.00
22 x 20 x 12	11.00	14.00	15.00

Can also be furnished with Half S, or Three-quarter S Trap, Standard Brass Floor Flange and Rubber Gasket extra.



Style B.

Roll Rim Slop Sink with Trap Standard, with 2-inch Cleanout, Brass Vent Connection, Brass Strainer, 15-inch Back, with Concealed Galvanized Air Chambers and Polished Fuller Bibbs.

From Wall to Center of Outlet, 20 x 16 -- 8¼ inches
" " " 22 x 20 -- 10½ "

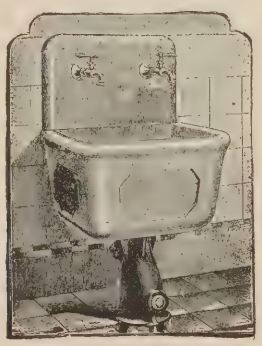
	Galvanized.	Enameled.
Price, as described, 20 x 16 x 12	21.00	23.00
" " 22 x 20 x 12	24.00	26.00

If Slop Sink and Trap are Enameled all over add to price of Enameled, 20 x 16 ..... 5.00
22 x 20 ..... 5.50
If without Bibbs deduct 2.00

Brass Floor Flange and Rubber Gaskets extra.

The Nason Imperishable White Porcelain and Vitrified Brown Glazed Slop Sink.

The "Chelsea."



Roll Rim White Porcelain Sink and Back with Bronzed Iron Trap Standard and Nickel Plated Strainer.

	Class A.	Class B.
20 x 16 x 12 deep	19.50	17.50
22 x 18 x 12 "	22.50	19.00
24 x 20 x 12 "	25.50	21.00

Roll Rim Vitrified Brown Glazed Sink and Back with Bronzed Iron Trap Standard and Nickel Plated Strainer.

20 x 16 x 12 deep	15.00
22 x 18 x 12 "	16.50
24 x 20 x 12 "	19.00

New York Reg. S Trap for Lead; S or ½ S Trap Standard for Iron, furnished in place of Trap shown, at same price.

All White and Brown goods subject to Extra Charge for crating.

Standard and Extra Heavy Copper Range Boilers.



STANDARD COPPER RANGE BOILER.

Standard Copper Range Boiler.

Capacity, Gallons.	Height, Inches.	Diameter, Inches.	Light Pressure.	Medium Pressure.	Double Boilers.	Boxing.
30	60	12	24.00	26.00	----	1.25
35	60	13	27.00	30 00	----	1.50
40	60	14	32.00	34.00	----	1 50
45	60	15	37.00	39.00	----	1.75
50	66	15	41.00	43.00	----	1.75
60	72	16	52.00	55.00	80.00	2.00
70	72	17	59.00	63.00	----	2.75
80	72	18	68.00	72.00	100.00	3.50
90	78	18	80.00	84.00	----	4.00
100	72	20	88.00	92.00	112.00	4.50

Extra Heavy Copper Range Boiler.

200 Pound Test.

Capacity, Gallons.	Height, Inches.	Diameter, Inches.	Price, Regular Pressure.	Boxing.
30	60	12	30.00	1.00
35	60	13	35.00	1.00
40	60	14	40.00	1.25
50	66	15	50.00	1.50
60	72	16	60.00	1.50
80	72	18	100.00	2.00
100	72	20	120.00	3.00



EXTRA HEAVY COPPER RANGE BOILER. 200 Lbs. Test.

Brown's Seamless Drawn Copper Range Boilers.



BROWN'S COPPER RANGE BOILER.

Regular pressure, tested to 200 pounds internal pressure to square inch, and are guaranteed to a working pressure of 150 pounds.

Capacity, Gallons.	Weight, Inches.	Diameter, Inches.	Price, Regular Pressure.	Price, Extra Heavy Pressure.	Boxing.
30	60	12	30.00	40.00	1.00
35	53	14	35.00	45.00	1.00
40	60	14	40.00	50.00	1.25
45	68	14	45.00	55.00	1.25
50	60	16	50.00	65.00	1.50
60	70	16	60.00	80.00	1.50
80	96	16	80.00	105.00	2.00
60	44	20	90.00	115.00	2.00
80	59	20	110.00	135.00	2.00
100	76	20	125.00	150.00	2.75
100	60	24	150.00	175.00	2.75
120	65½	24	155.00	180.00	3.00
125	69	24	160.00	185.00	3.50
150	78½	24	180.00	205.00	4.00
180	92½	24	210.00	235.00	4.00
200	103	24	240.00	265.00	4.00

Extra heavy pressure, tested to 300 pounds internal pressure to square inch, and are guaranteed to a working pressure of 200 pounds.



SECTIONAL.



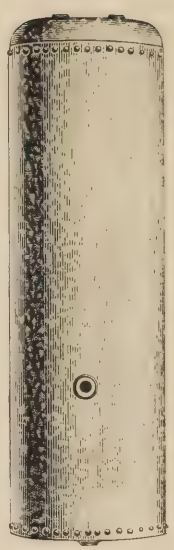
STANDARD TEST RANGE BOILER.

Double Riveted Galvanized Iron Range Boilers.

Standard Test, 150 Pounds.

Extra Heavy Test, 250 Pounds.

Capacity, Galls.	18	21	24	24	27	28	30
Height, inches.	36	42	48	36	54	42	60
Diam., "	12	12	12	14	12	14	12
Galv. or Plain	14.50	15.50	15.75	19.00	18.50	20.25	19.00
Capacity, Galls.	32	35	36	36	40	42	47
Height, inches.	48	60	72	54	60	48	54
Diam., "	14	13	12	14	14	16	16
Galv. or Plain	21.00	21.00	24.50	21.50	24.00	26.00	30.00
Capacity, Galls.	48	52	53	63	66	79	82
Height, inches.	72	60	48	72	60	72	60
Diam., "	14	16	18	16	18	18	20
Galv. or Plain	30.00	31.00	31.50	38.00	38.00	44.00	45.50
Capacity, Galls.	98	100	120	120	144	168	192
Height, inches.	72	60	72	60	72	84	96
Diam, "	20	22	22	24	24	24	24
Galv. or Plain	61.50	63.50	74.00	72.50	103.00	120.00	132.00



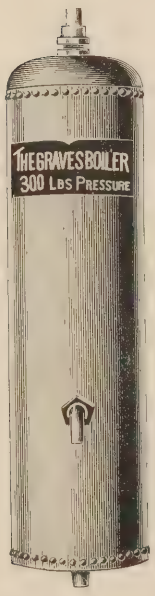
EXTRA HEAVY TEST RANGE BOILER.

Large Extra Heavy Galvanized Boilers.

Vertical and Horizontal—Test, 250 Pounds.

Capacity, Gallons	250	325	400	475	600	700	1000	1250
Height or Length, inches	72	96	120	96	120	144	144	144
Diameter in inches	30	30	30	36	36	36	42	48
Price, Black	100.00	125.00	150.00	165.00	200.00	235.00	275.00	325.00
" Galvanized	115.00	144.00	174.00	190.00	230.00	270.00	315.00	370.00

Hand Holes extra.



GRAVES BOILER.

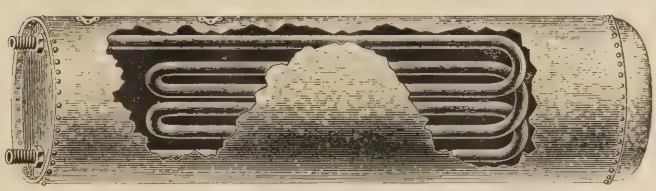
The Graves High Pressure Range Boiler.

Made of extra thick iron, extra galvanized inside and outside; every boiler examined inside by electric light; exterior finished in light blue enamel. Boxed for shipping. Will stand 300 lbs. pressure and is warranted for six years.

Capacity, Gallons.	18	21	24	27	30	36	35	24	28
Height, inches.	36	42	48	54	60	72	60	36	42
Diam., "	12	12	12	12	12	12	13	14	14
Price	24.50	25.50	25.75	28.50	29.00	34.50	31.00	29.00	30.25
Capacity, Gallons.	32	36	40	48	42	47	52	63	53
Height, inches.	48	54	60	72	48	54	60	72	48
Diam., "	14	14	14	14	16	16	16	16	18
Price	31.00	31.50	34.00	40.00	36.00	40.00	41.00	48.00	41.50

Capacity, Gallons.	66	79	82	98	100	120	120	144	168	192
Height, inches.	60	72	60	72	60	72	60	72	84	96
Diam., "	18	18	20	20	22	22	24	24	24	24
Price	48.00	54.00	55.50	71.50	73.50	84.00	82.50	113.00	130.00	142.00

Hot Water Storage Tanks.



EXTRA HEAVY GALVANIZED IRON HOT WATER TANK, WITH COIL.

Extra Heavy Galvanized Storage Tank with Coil.

This Tank is furnished with a tinned copper coil through which steam is circulated for the purpose of heating the water.

When equipped with our Power's Thermostat Valve, the temperature of the water can be maintained at any point desired.

Especially adapted for hot water supply in Hotels, Institutions, Apartment Houses, etc., where steam is available.

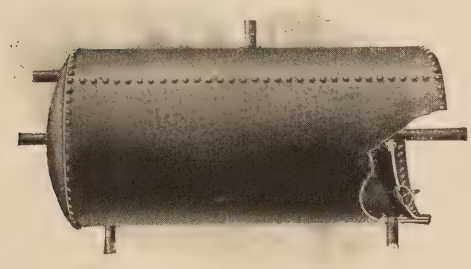
Extra Heavy Galvanized Tanks with Tinned Copper Coil—Horizontal and Vertical.

Capacity, Gallons	18	24	30	35	40	52	66	82	100	120	144	168
Height or Length, inches	36	48	60	60	60	60	60	60	60	60	72	84
Diameter, "	12	12	12	13	14	16	18	20	22	24	24	24
Each	28.00	30.00	32.00	34.00	36.00	44.00	60.00	68.00	88.00	96.00	124.00	144.00

Capacity, Gallons	192	140	185	203	225	212	265	290	315	360	425
Height or Length, inches	96	48	60	66	72	48	60	66	72	84	96
Diameter, "	24	30	30	30	30	36	36	36	36	36	36
Each	164.00	136.00	164.00	172.00	192.00	180.00	212.00	228.00	244.00	276.00	312.00

Larger Sizes quoted on application.
All coil connections are 1-inch iron pipe thread.
Coil Surface : 1¼-inch outside diameter tubing.
Proportion : 1 lineal foot of coil to each 4 gallons of capacity.

NOTE.—Vertical Boilers are furnished with Vertical Spiral Coils.



BLACK STEEL STORAGE TANK.

Black Steel Storage Tank.

This Tank is designed for direct connection to a hot water stove or tank heater, the water being heated by circulation, in the same manner as in the ordinary range boiler. Made in sizes up to 860 gallons, and especially adapted for service where large quantities of hot water are required.

Black Steel Storage Tanks—Horizontal and Vertical.

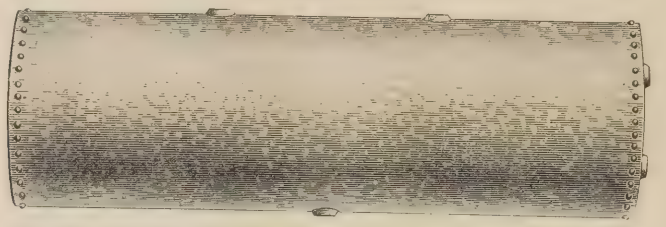
Capacity, Gallons	94	117	141	147	184	221	258	294	335	372	212	265	318
Height or Length, inches	48	60	72	48	60	72	84	96	108	120	48	60	72
Diameter, "	24	24	24	30	30	30	30	30	30	30	36	36	36
Each	45.00	48.50	53.00	52.00	56.00	60.00	68.50	74.00	80.00	85.00	63.00	69.00	75.00

Capacity, Gallons	371	424	477	530	636	360	432	504	572	644	716	860
Height or Length, inches	84	96	108	120	144	60	72	84	96	108	120	144
Diameter, "	36	36	36	36	36	42	42	42	42	42	42	42
Each	85.00	90.50	111.50	122.50	133.50	90.50	100.00	110.00	120.00	131.00	142.00	153.00

Thickness of Shell, $\frac{3}{16}$-inch to 424 Gals. Larger, ¼-inch thick.
" " Heads, ¼ " " 424 " " $\frac{5}{16}$ " "

Man-hole, 12.50 list extra. Cast Iron Legs, 1.20 each.

Horizontal Galvanized Iron Range Boiler.



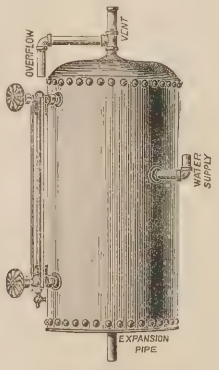
Standard Horizontal Galvanized Iron Range Boilers.

Capacity, Gallons	12	18	24	28	32	18	21	24	24	27	28
Length, inches	34	34	34	40	46	36	42	48	36	54	42
Diameter, "	10	12	14	14	14	12	12	12	14	12	14
Price	11.50	14.00	17.50	20.25	21.00	14.50	15.50	15.75	19.00	18.50	20.25
Capacity, Gallons	30	32	35	36	36	40	42	47	48	52	53
Length, inches	60	48	60	72	54	60	48	54	72	60	48
Diameter, "	12	14	13	12	14	14	16	16	14	16	18
Price	19.00	21.00	21.00	24.50	21.50	24.00	26.00	30.00	30.00	31.00	31.50
Capacity, Gallons	63	66	79	82	98	100	120	120	144	168	192
Length, inches	72	60	72	60	72	60	72	60	72	84	96
Diameter, "	16	18	18	20	20	22	22	24	24	24	24
Price	38.00	38.00	44.00	45.50	61.50	63.50	74.00	72.50	103.00	120.00	132.00

All the above sizes are made in extra heavy. List prices same as Vertical Extra Heavy Boilers.

Hot Water Expansion Tank.

Galvanized Iron Expansion Tank for use in Hot Water Heating System. Tapped top and bottom 1 inch and on the side ½ inch for water gauge; also tapped on side for 1-inch water supply.



EXPANSION TANK.

Expansion Tanks.

Capacity, Gallons	5½	8	10	12	15	18	20	24
Height, inches	20	20	20	24	30	36	30	36
Diameter, "	9	10	12	12	12	12	14	14
Price	6.00	7.50	8.00	8.50	9.00	9.50	12.50	13.00

Capacity, Gallons	26	32	42	66	82	100	120
Height, inches	30	36	48	60	60	60	60
Diameter, "	16	16	16	18	20	22	24
Price	14.00	15.00	16.50	31.00	37.00	51.00	58.00

Add for Water Gauge, 1.00 net.

Cast Iron Soil Pipe and Fittings.



SINGLE HUB SOIL PIPE.

Diameter of Pipe	2	3	4	5	6	7	8	10	12	15
Weight per length of 5 feet	17½	22½	32½	42	52	75	85	115	165	----
Pipe, Single Hub, per foot	.24	.32	.40	.60	.70	1.00	1.25	2.00	3.00	4.50
" " extra heavy	.35	.65	.80	1.15	1.30	1.75	2.25	3.00	4.00	6.00



DOUBLE HUB SOIL PIPE.

Diameter of Pipe	2	3	4	5	6	7	8	10	12	15
Weight per length of 5 feet	27½	47½	65	85	100	135	170	225	270	----
Pipe, Double Hub, per length, 5 feet	1.50	1.90	2.30	3.50	4.25	5.75	7.25	12.00	17.50	25.00
" " " extra heavy	2.05	3.55	4.30	6.25	7.25	9.75	12.75	18.00	23.00	35.00

MEDIUM WEIGHT SOIL PIPE.

Size	2	3	4	5	6	7	8	10
Weight per length of 5 feet	20	30	45	60	75	100	125	175
Single Hub, per foot	.32	.50	.68	.90	1.05	1.50	1.90	2.65
Double " "	.38	.56	.74	1.00	1.20	1.70	2.25	3.15

Soil Pipe Bends.



QUARTER BEND.



FIFTH.



SIXTH.



EIGHTH.



SIXTEENTH.

STANDARD.

	Size	2	3	4	5	6	7	8	10	12	15
Quarter Bends, Fifth " Sixth " Eighth " Sixteenth "		.40	.65	.80	1.50	2.00	2.25	3.00	4.00	6.00	10.00

EXTRA HEAVY.

	Size	2	3	4	5	6	7	8	10	12
Quarter Bends, Fifth " Sixth " Eighth " Sixteenth "		.50	.95	1.15	2.00	2.75	3.00	4.00	5.00	8.00



QUARTER BEND.
Double Hub.



ONE-EIGHTH BEND.
Double Hub.

	Size	STANDARD. 2	3	4	5	6	EXTRA HEAVY. 2	3	4	5	6
Double Hub, Quarter Bends, " Fifth " " Sixth " " Eighth " " Sixteenth "		.70	.95	1.10	2.00	2.50	.80	1.25	1.45	2.50	3.25



QUARTER BEND.
With Heel Inlet.



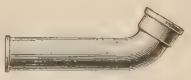
QUARTER BEND.
With Side Inlet.

Size	STANDARD. 2	3	4	5	6	EXTRA HEAVY. 2	3	4	5	6
Quarter Bends, 2-inch heel inlet	.90	1.15	1.35	2.00	2.50	1.00	1.45	1.65	2.50	3.25
" 3 " "	----	1.25	1.45	2.10	2.60	----	1.55	1.75	2.60	3.35
" 4 " "	----	----	1.60	2.25	2.75	----	----	1.90	2.75	3.50
" 2 " side inlet	1.40	1.65	1.85	2.50	3.00	1.50	1.95	2.15	3.00	3.75
" 3 " "	----	1.90	2.50	2.75	3.25	----	2.20	2.40	3.25	4.00
" 4 " "	----	2.10	2.35	3.00	3.50	----	----	2.65	3.50	4.25

Inlets on Bends furnished either Right or Left Hand.



LONG QUARTER BEND.



LONG EIGHTH BEND.

Size	STANDARD. 2	3	4	5	6	8	EXTRA HEAVY. 2	3	4	5	6	8
Long Quar. and Eighth Bend, 18 ins.	1.10	1.50	1.75	2.50	3.00	5.50	1.50	2.00	2.50	3.50	4.50	7.00
Short Sweep Bends, not illustrated	1.00	1.10	1.40	2.25	2.75	----	1.50	1.80	2.00	3.00	4.00	----
Sanitary Bends " "	1.20	1.50	2.00	3.00	4.00	----	1.80	2.00	2.75	4.00	5.50	----

Cast Iron Soil Pipe and Fittings.

T Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	.60	.80	6 x 2	2.50	3.50
3 x 2	.90	1.30	6 x 3	2.60	3.60
3 x 3	1.00	1.40	6 x 4	2.70	3.70
4 x 2	1.20	1.60	6 x 5	2.80	3.80
4 x 3	1.30	1.70	6 x 6	2.90	3.90
4 x 4	1.40	1.80	7 in. and Red. Sizes,	4.00	6.00
5 x 2	1.70	2.60	8 " " " "	5.00	8.00
5 x 3	1.80	2.70	10 " " " "	7.00	11.00
5 x 4	1.90	2.80	12 " " " "	12.00	16.00
5 x 5	2.00	2.90	15 " " " "	22.00	----

T Branches with Side Inlet.



Add to the above list prices of Ts.

For 2-inch Inlet, add 1.00
" 3 " " 1.25
" 4 " " 1.50

Can be furnished with inlet either on Right or Left hand side.

T Branches with Brass Trap Screw on Side.



Add to the above list prices of "Ts" each 2.50

Can be furnished with Trap Screw either on Right or Left hand side.

Long T Branches.



Size.		Standard.	Extra Heavy.	Size.		Standard.	Extra Heavy.
4 x 4	18 inches in clear	2.25	3.25	5 x 4	30 inches in clear	4.00	5.50
4 x 4	24 " " "	2.50	3.50	5 x 4	36 " " "	4.75	6.75
4 x 4	30 " " "	3.00	4.75	6 x 4	18 " " "	4.00	5.25
4 x 4	36 " " "	3.50	5.25	6 x 4	24 " " "	4.25	5.50
5 x 4	18 " " "	3.00	4.25	6 x 4	30 " " "	5.05	7.25
5 x 4	24 " " "	3.25	4.50	6 x 4	36 " " "	6.25	9.00

T Branches—Tapped for Iron Pipe.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 1¼ inch Thread	1.35	1.55	4 x 1¼ inch Thread	1.95	2.35
2 x 1½ " "	1.35	1.55	4 x 1½ " "	1.95	2.35
2 x 2 " "	1.35	1.55	4 x 2 " "	1.95	2.35
3 x 1¼ " "	1.55	2.00	4 x 2½ " "	1.95	2.35
3 x 1½ " "	1.55	2.00	4 x 3 " "	1.95	2.35
3 x 2 " "	1.55	2.00	4 x 4 " "	1.95	2.35

T Branch—All Hub Ends.



Size.	Standard.
4-inch	1.50

Sanitary T Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	.60	.90	6 x 2	2.60	3.60
3 x 2	1.00	1.40	6 x 3	2.70	3.70
3 x 3	1.10	1.50	6 x 4	2.80	3.80
4 x 2	1.30	1.70	6 x 5	2.90	3.90
4 x 3	1.40	1.80	6 x 6	3.00	4.00
4 x 4	1.50	1.90	7-inch and Red. Sizes.	4.00	6.00
5 x 2	1.80	2.70	8 " " " "	5.00	8.00
5 x 3	1.90	2.80	10 " " " "	7.00	11.00
5 x 4	2.00	2.90	12 " " " "	12.00	16.00
5 x 5	2.10	3.00			

Cast Iron Soil Pipe and Fittings.

Sanitary T Branches with Side Inlet.



Add to list prices of T Branches.

For 2-inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Can be furnished with Inlet either on Right or Left Hand Side.

Long Sanitary T Branches.



Size.		Standard.	Extra Heavy.
4 x 4	18 inches in Clear	2.25	3.25
4 x 4	24 " "	2.50	3.50
4 x 4	30 " "	3.00	4.75
4 x 4	36 " "	3.50	5.25
5 x 4	18 " "	3.00	4.25
5 x 4	24 " "	3.25	4.50
5 x 4	30 inches in Clear	4.00	5.50
5 x 4	36 " "	4.75	6.75
6 x 4	18 " "	4.00	5.25
6 x 4	24 " "	4.25	5.50
6 x 4	30 " "	5.25	7.25
6 x 4	36 " "	6.25	9.00

Sanitary T Branches Tapped for Iron Pipe.



Size.	Standard.	Extra Heavy.
2 x 1¼	1.35	1.55
2 x 1½	1.35	1.55
2 x 2	1.35	1.55
3 x 1¼	1.55	2.00
3 x 1½	1.55	2.00
3 x 2	1.55	2.00
4 x 1¼	1.95	2.35
4 x 1½	1.95	2.35
4 x 2	1.95	2.35
4 x 2½	1.95	2.35
4 x 3	1.95	2.35
4 x 4	1.95	2.35

Y Branches.



Size.	Standard.	Extra Heavy.
2 x 2	.60	.90
3 x 2	1.00	1.40
3 x 3	1.10	1.50
4 x 2	1.30	1.70
4 x 3	1.40	1.80
4 x 4	1.50	1.90
5 x 2	1.80	2.70
5 x 3	1.90	2.80
5 x 4	2.00	2.90
5 x 5	2.10	3.00
6 x 2	2.60	3.60
6 x 3	2.70	3.70
6 x 4	2.80	3.80
6 x 5	2.90	3.90
6 x 6	3.00	4.00
7 inches and Red. Sizes	4.00	6.00
8 " " " "	5.00	8.00
10 " " " "	7.00	11.00
12 " " " "	12.00	16.00

Y Branches with Side Inlet.



Add to above list prices of Y Branches.

For 2-inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Can be furnished with Inlet either on Right or Left Hand Side.

Long Y Branches.



Size.		Standard.	Extra Heavy.
4 x 4	18 inches in Clear	2.25	3.25
4 x 4	24 " "	2.50	3.50
4 x 4	30 " "	3.00	4.75
4 x 4	36 " "	3.50	5.25
5 x 4	18 " "	3.00	4.25
5 x 4	24 " "	3.25	4.50
5 x 4	30 inches in Clear	4.00	5.50
5 x 4	36 " "	4.75	6.75
6 x 4	18 " "	4.00	5.25
6 x 4	24 " "	4.25	5.50
6 x 4	30 " "	5.25	7.25
6 x 4	36 " "	6.25	9.00

Cast Iron Soil Pipe and Fittings.

Inverted Y Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	.80	1.25	5 x 4	2.25	3.00
3 x 2	1.25	1.75	6 x 2	3.00	4.00
4 x 2	1.50	2.00	6 x 3	3.00	4.00
4 x 3	1.50	2.00	6 x 4	3.00	4.00
5 x 2	2.25	3.00	8 x 4	6.00	8.50
5 x 3	2.25	3.00			

Inverted Y Tapped for Iron Pipe.



Size.	Standard.	Extra Heavy.
2 x 1¼-inch Thread	1.50	2.00
2 x 1½ "	1.50	2.00
2 x 2 "	1.50	2.00
3 x 1¼ "	1.75	2.25
3 x 1½ "	1.75	2.25
3 x 2 "	1.75	2.25
4 x 1¼ "	2.25	2.75
4 x 1½ "	2.25	2.75
4 x 2 "	2.25	2.75
5 x 2 "	2.75	3.50

Half Y Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	.60	.90	6 x 2	2.60	3.60
3 x 2	1.00	1.40	6 x 3	2.70	3.70
3 x 3	1.10	1.50	6 x 4	2.80	3.80
4 x 2	1.30	1.70	6 x 5	2.90	3.90
4 x 3	1.40	1.80	6 x 6	3.00	4.00
4 x 4	1.50	1.90	7 in. and Red. Sizes	4.00	6.00
5 x 2	1.80	2.70	8 " "	5.00	8.00
5 x 3	1.90	2.80	10 " "	7.00	11.00
5 x 4	2.00	2.90	12 " "	12.00	16.00
5 x 5	2.10	3.00			

Half Y Branches with Side Inlet.



Add to above list prices of Half Y Branches.

For 2 inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Can be furnished with Inlet either on Right or Left Hand Side.

Cross or Double T Branch.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	1.00	1.25	6 x 2	2.90	3.90
3 x 2	1.35	1.75	6 x 3	3.05	4.05
3 x 3	1.50	1.90	6 x 4	3.20	4.20
4 x 2	1.50	1.95	6 x 5	3.35	4.35
4 x 3	1.65	2.10	6 x 6	3.50	4.50
4 x 4	1.80	2.25	7 in. and Red. Sizes	5.50	7.00
5 x 2	2.25	3.05	8 " "	6.00	9.00
5 x 3	2.40	3.20	10 " "	9.00	14.00
5 x 4	2.55	3.35	12 " "	14.00	18.00
5 x 5	2.70	3.50			

Crosses with Side Inlet.



Add to the above list prices of Crosses.

For 2-inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Crosses—All Hub Ends.



Size.	Standard.
4 inches	2.00

Cast Iron Soil Pipe and Fittings.

Sanitary Crosses or Double Sanitary T Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	1.20	1.50	6 x 2	3.50	4.90
3 x 2	1.60	2.10	6 x 3	3.65	5.05
3 x 3	1.75	2.25	6 x 4	3.80	5.20
4 x 2	1.95	2.70	6 x 5	3.95	5.35
4 x 3	2.10	2.85	6 x 6	4.10	5.50
4 x 4	2.25	3.00	7 in. and Red. Sizes	5.50	7.00
5 x 2	2.70	3.80	8 " "	6.00	9.00
5 x 3	2.85	3.95	10 " "	9.00	14.00
5 x 4	3.00	4.10	12 " "	14.00	18.00
5 x 5	3.15	4.25			

Sanitary Crosses with Side Inlet.



Add to the above list prices of Sanitary Crosses.

For 2-inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Double Y Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	1.20	1.50	6 x 2	3.50	4.90
3 x 2	1.60	2.10	6 x 3	3.65	5.05
3 x 3	1.75	2.25	6 x 4	3.80	5.20
4 x 2	1.95	2.70	6 x 5	3.95	5.35
4 x 3	2.10	2.85	6 x 6	4.10	5.50
4 x 4	2.25	3.00	7 in. and Red. Sizes	5.50	7.00
5 x 2	2.70	3.80	8 " "	6.00	9.00
5 x 3	2.85	3.95	10 " "	9.00	14.00
5 x 4	3.00	4.10	12 " "	14.00	18.00
5 x 5	3.15	4.25			

Double Y Branches with Side Inlet.



Add to above list prices of Double Y Branches.

For 2-inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Double Half Y Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2 x 2	1.20	1.50	6 x 2	3.50	4.90
3 x 2	1.60	2.10	6 x 3	3.65	5.05
3 x 3	1.75	2.25	6 x 4	3.80	5.20
4 x 2	1.95	2.70	6 x 5	3.95	5.35
4 x 3	2.10	2.85	6 x 6	4.10	5.50
4 x 4	2.25	3.00	7 in. and Red. Sizes	5.50	7.00
5 x 2	2.70	3.80	8 " "	6.00	9.00
5 x 3	2.85	3.95	10 " "	9.00	14.00
5 x 4	3.00	4.10	12 " "	14.00	18.00
5 x 5	3.15	4.25			

Double Half Y Branches with Side Inlet.



Add to above list prices of Double Half Y Branches.

For 2-inch Inlet, add	1.00
" 3 " "	1.25
" 4 " "	1.50

Ventilating Branches.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy
2 x 2	.80	1.25	5 x 4	2.25	3.00
3 x 2	1.25	1.75	6 x 2	3.00	4.00
4 x 2	1.50	2.00	6 x 3	3.00	4.00
4 x 3	1.50	2.00	6 x 4	3.00	4.00
5 x 2	2.25	3.00	8 x 4	6.00	8.50
5 x 3	2.25	3.00			

Cast Iron Soil Pipe and Fittings.

Offsets.



Size.	Standard.	Extra Heavy.
2-inch to offset 2-inch	.45	.75
2 " " " 4 "	.50	.90
2 " " " 6 "	.60	1.00
2 " " " 8 "	.70	1.10
2 " " " 10 "	.80	1.20
2 " " " 12 "	.90	1.30
2 " " " 14 "	1.00	1.45
2 " " " 16 "	1.25	1.60
2 " " " 18 "	1.50	2.00
2 " " " 20 "	1.75	2.50
3 " " " 2 "	.80	1.00
3 " " " 4 "	.90	1.25
3 " " " 6 "	1.00	1.35
3 " " " 8 "	1.10	1.50
3 " " " 10 "	1.25	1.65
3 " " " 12 "	1.40	1.80
3 " " " 14 "	1.50	2.00
3 " " " 16 "	1.75	2.25
3 " " " 18 "	2.00	2.50
3 " " " 20 "	2.25	3.00
4 " " " 2 "	.85	1.25
4 " " " 4 "	1.00	1.40
4 " " " 6 "	1.15	1.60
4 " " " 8 "	1.30	1.80
4 " " " 10 "	1.45	2.00

Size.	Standard.	Extra Heavy.
4-inch to offset 12-inch	1.60	2.25
4 " " " 14 "	1.80	2.50
4 " " " 16 "	2.00	2.75
4 " " " 18 "	2.25	3.25
4 " " " 20 "	2.50	3.75
4 " " " 22 "	3.00	4.50
4 " " " 24 "	3.50	5.25
5 " " " 4 "	1.70	2.25
5 " " " 6 "	1.90	2.50
5 " " " 8 "	2.10	2.75
5 " " " 10 "	2.30	3.00
5 " " " 12 "	2.50	3.25
5 " " " 14 "	2.75	3.50
5 " " " 16 "	3.00	3.75
5 " " " 18 "	3.25	4.25
5 " " " 20 "	3.50	4.75
6 " " " 4 "	2.00	3.00
6 " " " 6 "	2.25	3.25
6 " " " 8 "	2.50	3.50
6 " " " 10 "	2.75	3.75
6 " " " 12 "	3.00	4.00
6 " " " 14 "	3.25	4.50
6 " " " 16 "	3.75	5.25
6 " " " 18 "	4.25	6.00
6 " " " 20 "	5.00	7.00

Offsets with 2-inch Vent.



For Offsets with 2-inch Vent add to list prices of Regular Offsets, each ..... .50

Increaser and Ventilating Branch.

With Straight Side Outlet for Calking.



Size.	Standard.	Extra Heavy.
2-inch to 4-inch Hub with 2-inch Outlet	1.75	2.25
4 " " 6 " " " 2 " "	2.25	3.00
4 " " 6 " " " 3 " "	3.00	3.75

Increasers for Calking.

Hub End to Govern Price.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
3 inch	.70	1.00	7-inch	1.60	2.75
4 "	.90	1.25	8 "	2.00	5.00
5 "	1.15	1.75	10 "	4.00	6.50
6 "	1.25	2.25	12 "	6.00	8.50

Increaser—Tapped for Iron Pipe.



Size.	Standard.	Extra Heavy.
1½-inch Pipe Thread to 4-inch Hub	1.40	1.75
2 " " " " 4 " "	1.50	1.85
2 " " " " 5 " "	1.75	2.35
2 " " " " 5 " "	2.00	2.60

Short Increaser—Tapped for Iron Pipe.



Size.	Extra Heavy.
1¼-inch Pipe Thread to 2-inch Hub	.85
1¼ " " " " 3 " "	1.00
1¼ " " " " 4 " "	1.20
1½ " " " " 2 " "	.85
1½ " " " " 3 " "	1.00
1½ " " " " 4 " "	1.20
2 " " " " 3 " "	1.00
2 " " " " 4 " "	1.20

Increasing and Ventilating Branch.

With Bent Side Outlet for Calking.



Size.	Standard.	Extra Heavy.
2-inch to 4-inch Hub with 2-inch Outlet	2.00	2.50
4 " " 6 " " " 2 " "	2.50	3.25

Ventilating Caps—Spigot Ends.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2-inch	.40	.60	5-inch	1.25	2.50
3 "	.60	.80	6 "	1.75	3.50
4 "	.80	1.25			

Cast Iron Soil Pipe and Fittings.

Single Hubs.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.30	.40	7	1.40	2.50
3	.50	.60	8	2.50	3.50
4	.65	.75	10	3.50	4.50
5	.85	1.10	12	5.00	8.00
6	1.00	1.35			

Double Hubs.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.30	.45	7	1.50	2.50
3	.55	.70	8	2.50	3.50
4	.70	.85	10	3.50	4.50
5	1.00	1.35	12	5.00	8.00
6	1.20	1.60			

Straight Sleeves.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.30	.45	7	1.50	2.50
3	.55	.70	8	2.50	3.50
4	.70	.85	10	3.50	4.50
5	1.00	1.35	12	5.00	8.00
6	1.20	1.60			

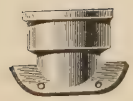
Reducers.

Spigot End to Govern Price.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
3	.50	.60	7	1.40	2.50
4	.65	.75	8	2.50	3.50
5	.85	1.10	10	3 50	4.50
6	1.00	1.35	12	5.00	8.00

"T" Saddle Hubs.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.30	.40	7	1.40	2.00
3	.50	.65	8	1.50	2.25
4	.60	.80	10	2.25	3.25
5	.75	1.00	12	4.00	6.00
6	1.10	1.40			

"Y" Saddle Hubs.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.35	.45	7	1.50	2.25
3	.55	.70	8	2.00	3.00
4	.70	.90	10	4.00	5.50
5	.90	1.15	12	4.50	6.50
6	1.25	1.55			

Half "Y" Saddle Hubs.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.35	.45	7	1.50	2.25
3	.55	.70	8	2.00	3.00
4	.70	.90	10	4.00	5.50
5	.90	1.15	12	4.50	6.50
6	1.25	1.55			

Pipe Bands.



Size.	Standard.	Extra Heavy.	Size.	Standard.	Extra Heavy.
2	.45	.90	5	1.25	2.00
3	.60	1.15	6	1.75	2.75
4	.80	1.50	8	2.25	4.00

Cast Iron Soil Pipe and Fittings.

Pipe Bands With T Branch.



Size.	Standard.	Extra Heavy.
2	.75	1.50
3	1.00	1.75
4	1.25	2.00
5	1.75	2.75
6	2.25	3.50
8	3.00	5.00

Pipe Bands With Y Branch.



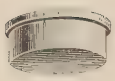
Size	Standard.	Extra Heavy.
2	.75	1.50
3	1.00	1.75
4	1.25	2.00
5	1.75	2.75
6	2.25	3.50
8	3.00	5.00

Pipe Bands With Half Y Branch.



Size.	Standard.	Extra Heavy.
2	.75	1.50
3	1.00	1.75
4	1.25	2.00
5	1.75	2.75
6	2.25	3.50
8	3.00	5.00

Plugs.



Size.	Standard.	Extra Heavy.
2	.15	.25
3	.25	.35
4	.30	.40
5	.40	.60
6	.50	.75
7	.90	1.25
8	1.20	1.50
10	2.00	3.00
12	3.00	4.00

Roof Irons.



Size.	Standard.
2	.90
3	1.15
4	1.30
5	1.50
6	1.80

Pipe Hooks.



Size.	Standard.
2	.08
3	.10
4	.12
5	.15
6	.20
8	.40

Connolly T or Y Saddle Hubs.





Size.	T Hubs.	Y Hubs.
2 x 2	.40	.45
3 x 2	.65	.70
3 x 3	.65	.70
4 x 2	.80	.90
4 x 3	.80	.90
4 x 4	.80	.90
5 x 2	1.00	1.15
5 x 3	1.00	1.15
5 x 4	1.00	1.15
5 x 5	1.00	1.15
6 x 2	1.40	1.55
6 x 3	1.40	1.55
6 x 4	1.40	1.55
6 x 5	1.40	1.55

Cast Iron Soil Pipe Fittings—Traps.



FULL S TRAP.



½ S TRAP.



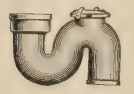
¾ S TRAP.



RUNNING TRAP.

Plain Traps, S, ½ S, ¾ S and Running.

Size	2	3	4	5	6	7	8	10	12
Standard, each	.80	1.25	1.75	3.50	4.50	7.00	9.00	----	----
Extra Heavy, each	1.25	2.00	2.75	4.50	6.00	9.00	12.00	20.00	30.00



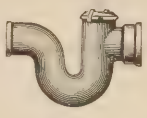
FULL S TRAP.



½ S TRAP.



¾ S TRAP.



RUNNING TRAP.

Hand Hole and Cover Traps, S, ½ S, ¾ S and Running.

Size	2	3	4	5	6	7	8	10	12
Standard, each	1.00	1.50	2.00	3.75	4.75	7.25	9.25	15.00	21.00
Extra Heavy, each	1.50	2.25	3.00	4.75	6.25	10.50	12.50	21.00	31.00



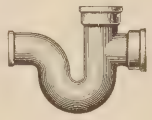
FULL S TRAP WITH VENT.



½ S TRAP WITH VENT.



¾ S TRAP WITH VENT.



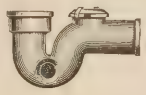
RUNNING TRAP WITH HUB FOR VENT.



RUNNING TRAP WITH HUB FOR DOUBLE VENT.



RUNNING TRAP WITH Y BRANCH AND VENT.



½ S TRAP WITH HAND HOLE COVER AND INLET.

Cast Iron Traps with Vent.

STANDARD.

Size	2	3	4	5	6	7	8	10	12
Traps with 2-inch Vent, S, ½ S and ¾ S	1.25	1.75	2.25	4.00	5.00	7.50	9.50	----	----
" " 4-inch " S, ½ S and ¾ S	----	----	2.50	4.25	5.25	7.75	9.75	----	----
Running Traps with 2-inch Vent	1.25	1.75	----	----	----	----	----	----	----
" " " 3-inch "	----	1.85	----	--	----	--	- -	----	----
" " " 4-inch "	----	----	2 50	4.25	5.25	---	9.75	----	----
" " " 5-inch "	----	- --	----	4.50	----	----	----	----	----
" " " 6-inch "	----	----	----	----	5.50	7.75	10.00	16.00	22.00
" " " 2-inch Double Vent	1.75	2.25	----	----	----	----	- --	----	----
" " " 3-inch " "	----	2.45	----	----	----	----	---	---	----
" " " 4-inch " "	--	--	3.25	5.00	6.00	-- -	---	- --	----
" " " 5-inch " "	----	----	----	5.50	----	----	----	----	----
" " " 6 inch " "	----	----	----	----	6.50	9.00	11.00	17.00	23.00
Running Trap with Y Branch and Vent	----	----	3.00	4.50	5.50	----	----	----	----
Half S Trap with Hand Hole Cover and Inlet	2.00	2.50	3.00	4.75	5.75	- --	10.75	----	--

EXTRA HEAVY.

Size	2	3	4	5	6	7	8	10	12
Traps with 2-inch Vent, S, ½ S and ¾ S	1.75	2.50	3.25	5.00	6.50	9.50	12.50	----	----
" " 4-inch " S, ½ S and ¾ S	-	----	3.50	5.25	6.75	9.75	12.75	--	----
Running Traps with 2-inch Vent	1.75	2.50	----	----	----	----	----	----	----
" " " 3-inch "	-- -	2.60	-- -	--	----	- --	----	----	- -
" " " 4 inch "	----	----	3.50	5.25	6.75	----	12.75	---	---
" " " 5-inch "	-	- --	- --	5.50	---	- --	- --	---	----
" " " 6-inch "	----	----	----	----	7.00	11.00	13.00	22.00	32.00
" " " 2-inch Double Vent	2.25	3.00	----	----	----	---	- -	---	- --
" " " 3-inch " "	----	3.20	-		---	-- -		---	----
" " " 4-inch " "	-- -	-- -	4.25	6.00	7.50	----	---	----	----
" " " 5-inch " "	----	----	----	6.50	----	----	-	----	----
" " " 6-inch " "	----	----	----	----	8.00	12.00	14.00	23.00	33.00
Running Trap with Y Branch and Vent	----	----	4.00	5.50	7.00	----	----	----	----
Half S Trap with Hand Hole Cover and Inlet	2.50	3.25	4.00	5.75	7.25	----	14.00	----	----

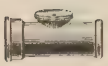
Cleanouts, Pennie Traps and Ayres Inlet.

Cleanouts—With Hand Hole and Swivel Cover.



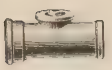
Size	2	3	4	5	6	8
Standard	.75	1.00	1.25	1.75	2.25	5.00
Extra Heavy	1.00	1.50	1.75	2.25	3.00	7.50

Cleanouts—With Hand Hole and Bolted Cover.



Size	2	3	4	5	6	8
Standard	.75	1.00	1.25	1.75	2.25	5.00
Extra Heavy	1.00	1.50	1.75	2.25	3.00	7.50

Cleanouts—With Brass Trap Screw.



Size	2	3	4	5	6	8
Standard	3.25	3.50	3.75	4.25	4.75	7.50
Extra Heavy	3.50	4.00	4.25	4.75	5.50	10.00

The Pennie Back Water and Sewer Gas Trap.

These Traps can be set in either vertical, horizontal or inclined position, as shown in illustrations. They are entirely automatic in their action.



HORIZONTAL POSITION.
With Cap as Furnished.



VERTICAL POSITION.
Showing Valve Action.



INCLINED POSITION.
With Cover Removed.



COVER.

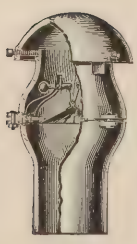
The Pennie Back Water and Sewer Gas Traps.

Size	2	3	4	5	6	8	10	12	14
Each	5.50	6.00	8.00	11.00	13.00	22.00	50.00	60.00	125.00

This Trap will stand smoke test and can be used with any weight soil pipe.

The Ayres Fresh Air Inlet.

Always a Fresh Air Inlet. Never a Foul Air Outlet.

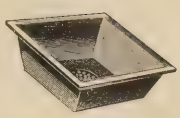


The Ayres Fresh Air Inlet, comprises a valve adapted to be mounted on the sewer or drain pipe on the house side of the intercepting trap, and consists of a normally closed rubber seated cone valve, provided with a counter-balancing mechanism permitting the valve to open when the density of the atmosphere within the drain pipe is less than the atmospheric density surrounding the inlet orifice, and to instantly close the valve when the density of the two atmospheres become equal, especially when the natural circulation is down the stack pipes from the roof outlet; or when there is no circulation either towards or from the roof outlet.

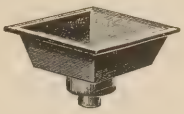
Made in two sizes: the four-inch Inlet is available for a four, five or six inch sewer pipe and the six-inch Inlet for a seven and eight inch sewer.

4 inch..... 6.50 6 inch..... 11.50

Cesspools, Grates, Etc.



HYDRANT CESSPOOL.



HYDRANT CESSPOOL.
With Bell Trap.

Size	10 x 10 x 6	12 x 12 x 6	14 x 14 x 6	16 x 16 x 6	18 x 18 x 6
Hydrant Cesspools, Plain	.90	1.00	1.15	1.30	1.60
" " Galvanized	1.40	1.50	1.75	1.95	2.50
" " with Bell Trap, Plain	1.40	1.50	1.65	1.80	2.10
" " " " Galvanized	2.10	2.25	2.50	2.75	3.25



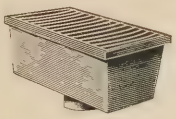
PLAIN CESSPOOL.

Size.	Outlet.	Standard.	Extra Heavy.
6 x 6	2-inch	.75	1.25
9 x 9	3 "	1.00	1.50
9½ x 9½	4 "	1.25	2.00
10 x 10	4 "	1.50	2.75
12 x 12	4 "	2.00	3.25
13 x 13	4 "	2.50	3.75
14 x 14	4 "	2.75	4.00



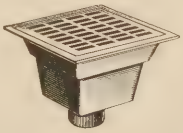
PLAIN CESSPOOL.
With Bell Trap and Hinged Strainer.

Size.	Outlet.	Standard.	Extra Heavy.
6 x 6	2-inch	1.00	1.50
8 x 8	3 "	1.25	1.75
9 x 9	3 "	1.35	1.85
9½ x 9½	4 "	1.60	2.25
10 x 10	4 "	2.00	3.00
12 x 12	4 "	2.50	3.50
13 x 13	4 "	3.00	4.25
13 x 13	5 "	3.50	4.75



ALLEY GRATE.

Size.	Painted.
10 x 16 x 9 inches deep.	3.50
13 x 13 x 7 " "	2.50





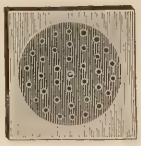
Section.

LARGE CESSPOOL.
With Bell Trap and Grating.

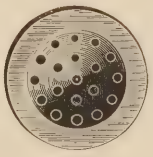
Size.	Painted.	Galvanized.
12 x 12 x 10 inches deep.	3.75	7.50
12 x 15 x 10 " "	4.00	8.00
15 x 15 x 10 " "	4.25	9.00
16 x 16 x 10 " "	4.50	10.00
18 x 18 x 10 " "	10.00	20.00



CESSPOOL PLATE.
With Bars.



CESSPOOL PLATE.
With Holes.

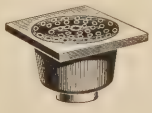


ROUND CESSPOOL PLATE.

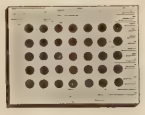


ROUND BAR STRAINER.

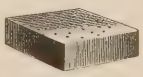
Size	4	5	6	7	8	9	10	11	12	14	16	8 x 6	With Hinged Covers 6 and 8-in.	
Cesspool Plate with Bars	.20	.25	.30	.40	.60	.70	.80	.90	1.00	1.20	1.50	.50	----	----
" " " Holes	.20	.25	.30	.40	.60	.70	.80	.90	1.00	-- -	----	.50	.50	1.00
Round Cesspool Plates	.20	.25	.30	.40	.60	.70	.80	----	1.00	----	----	----	----	----
Round Bar Strainers	.20	.25	.30	.50	.65	.80	----	----	----	----	- -	----	----	----



STENCH TRAP.



CESSPOOL GRATE.
Rectangular.



VENT BOX.

Size	6 x 6	8 x 8	6 x 10
Stench Trap, 2-inch Outlet, Painted	1.00	----	----
Cesspool Grate, Rectangular	----	----	.65
Vent Box, Solid	.60	.90	----
" " Hinged	.75	1.25	----

Stable Fixtures.

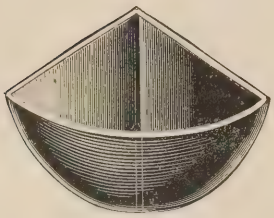


Fig. 245.

Corner Feed Boxes.

Size 16 Inches Long on Sides.

Plain	2.50
Galvanized	5.00
Enameled	6.00

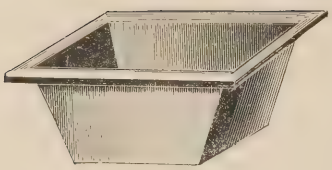


Fig. 246.

Square Feed Boxes.

Sizes.	Plain.	Galvanized.	Enameled.
16 x 16 x 10 inches deep	2.70	5.25	7.50
20 x 14 x 12 "	3.50	6.50	8.50



Fig. 247.

Corner Hay Racks.

Size 33 Inches Long on Sides.

Plain	2.75
Galvanized	5.00



Fig. 248.

Half-Round Hay Racks.

Size 48 Inches Long on Back.

Plain	5.00
Galvanized	9.00

Special Recessed Fittings
For Wrought Iron Drainage Systems.

Screwed. For Wrought Iron Pipe.

These fittings have an interior shoulder, and are made with same inside capacity as the inside diameter of the pipe, thus securing an unobstructed surface, allowing all solid matter to pass without choking up the pipes.



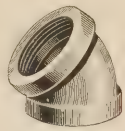
90° LONG TURN ELBOW.



90° ELBOW.



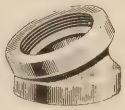
45° LONG TURN ELBOW.



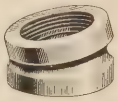
45° ELBOW.



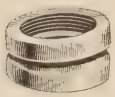
60° ELBOW.



22½° ELBOW.



11¼° ELBOW.

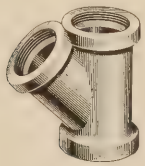


5⅝° ELBOW.

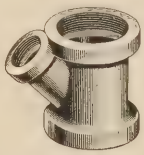
Elbows.

Size	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, 5⅝° each	----	.50	.60	----	1.10	1.70	2.60	3.50	6.00	7.00	9.00
" 11¼° "	----	.50	.60	----	1.10	1.70	2.60	3.50	6.00	7.00	9.00
" 22½° "	----	.50	.60	----	1.10	1.70	2.60	3.50	6.00	7.00	9.00
" 45° "	.45	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
" 45° Long Turn "	----	----	----	----	1.45	2.25	4.00	5.75	9.50	11.00	13.50
" 60° "	----	.50	.60	----	1.10	1.70	2.60	3.50	6.00	7.00	9.00
" 90° "	.45	.50	.60	.90	1.10	1.70	2.60	3.50	6.00	7.00	9.00
" 90° Long Turn "	.55	.60	.70	1.10	1.30	2.00	3.60	5.20	8.50	10.00	12.00

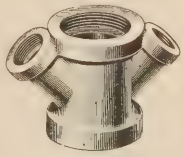
NOTE.—The Outlet on 90° Elbows is tapped, graded ¼ inch to the foot, unless otherwise ordered.



45° Y BRANCH.



45° REDUCING Y BRANCH.



45° DOUBLE Y BRANCH.

45° Y Branches.

Size	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, 45° Y Branches, each	.75	.80	1.00	1.50	1.70	2.60	3.50	5.50	12.00	15.00	21.00
" 45° " Double, "	.95	1.00	1.30	1.75	2.20	3.10	4.25	6.50	15.00	18.00	25.00

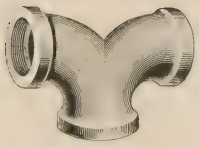
Reducing 45° Y Branches.

Size	1½ x 1½	2 x 1½	2½ x 1½	2½ x 2	3 x 1½	3 x 2	4 x 1½	4 x 2	4 x 3	5 x 2
Price, each	.80	1.00	1.50	1.50	1.70	1.70	2.60	2.60	2.60	3.50
Size	5 x 3	5 x 4	6 x 2	6 x 3	6 x 4	6 x 5	7 x 4	8 x 3	8 x 4	8 x 6	10 x 4	10 x 6	10 x 8
Price, each	3.50	3.50	5.50	5.50	5.50	5.50	12.00	15.00	15.00	15.00	21.00	21.00	21.00

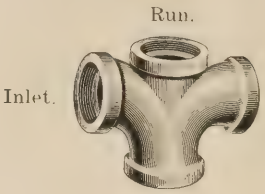
Reducing 45° Double Branches.

Size	1½ x 1¼	2 x 1½	2½ x 2	3 x 2	4 x 2	5 x 2	6 x 2	7 x 4	8 x 3	8 x 4	8 x 6
Price, each	1.00	1.30	1.75	2.20	3.10	4.25	6.50	15.00	18.00	18.00	18.00

Recessed Drainage Fittings.



3-WAY ELBOW.



CROSS.

Three-way Elbows.

Size	1½	2	3	4	5	5 x 4	6	6 x 5
Price, 3-Way Elbow, each	1.00	1.30	2.20	3.10	4.25	----	6.50	---
" " " Reducing, each	----	----	----	----	----	4.25	----	6.50

Crosses.

Size	1	1½	2	3	4	5	6
Price, each	1.00	1.25	1.50	3.00	4.00	6.50	8.50

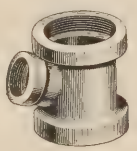
Reducing Crosses.

Size	3 x 2	4 x 2	5 x 4	6 x 5
Price, each	3.00	4.00	6.50	8.50

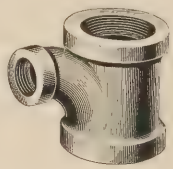
NOTE.—The inlets on 3-Way Elbows and Crosses are tapped, graded ¼-inch to the foot, unless otherwise ordered.



TEE.



60° Y BRANCH.



90° Y BRANCH.
T Pattern.

Tees.

Size	1½	2	2½	3	4	5	6	7	8	10
Price, each	.75	.90	1.25	1.40	2.30	4.00	6.00	9.00	12.00	18.00

Reducing Tees.

Size	2 x 1½	2½ x 2	2½ x 1½	3 x 2	4 x 2	4 x 3	5 x 2	5 x 3	6 x 4
Price, each	.90	1.25	1.25	1.40	2.30	2.30	4.00	4.00	6.00

Reducing 60° Y Branches.

Size	2 x 1½	3 x 2	4 x 2	4 x 3	5 x 2	5 x 3	5 x 4	6 x 2	6 x 4	6 x 5	8 x 4	8 x 6
Price, each	.90	1.70	2.60	2.60	4.50	4.50	4.50	7.00	7.00	7.00	15.00	15.00

90° Y Branches. (Tee Pattern.)

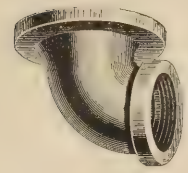
Size	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, each	1.00	1.15	1.35	1.90	2.25	3.50	5.50	7.00	11.50	14.50	20.00

Reducing 90° Y Branches. (Tee Pattern.)

Size	1½ x 1¼	2 x 1½	2½ x 1½	2½ x 2	3 x 1½	3 x 2	4 x 1½	4 x 2	4 x 2½	4 x 3	3 x 4
Price, each	1.15	1.35	1.90	1.90	2.25	2.25	3.50	3.50	3.50	3.50	3.50
Size	5 x 1½	5 x 2	5 x 3	5 x 4	6 x 2	6 x 3	6 x 4	6 x 5	7 x 4	8 x 3	8 x 4	10 x 4	10 x 6
Price, each	5.50	5.50	5.50	5.50	7.00	7.00	7.00	7.00	11.50	14.50	14.50	20.00	20.00

The outlet on T's and 90° Y Branches, T Pattern, are tapped, graded ¼-inch to the foot, unless otherwise ordered.

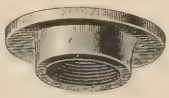
Recessed Drainage Fittings.



CLOSET ELBOW.
With Flange.



CLOSET ELBOW.
Reducing.



CLOSET FLANGE.
Iron.



CLOSET FLANGE.
Brass.

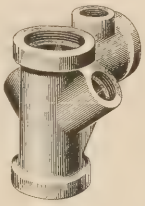
Size	4	4 x 5	5
Price Closet Elbow, with Flange 10 inch diameter, each	2.50	----	----
" " " Reducing, " "	----	3.70	----
" " Flange, Iron, Flange 7 " "	1.00	----	----
" " " " " 10 " "	----	----	1.30
" " " Brass, Flange 7½ " "	----	----	3.20

NOTE.—The outlet on Closet Elbows is tapped, graded to ¼ inch to the foot, unless otherwise ordered.



Left Inlet — Right Inlet

CLOSET TEE.
With Inlet on both Sides.



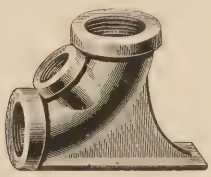
Left Inlet — Right Inlet

CLOSET TEE.
With Inlet on both Sides and Top.

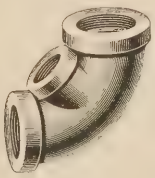
90° Y Branches, with Auxiliary Inlets.

Size	3	4	5 x 4	6 x 4
Price with 2-inch Inlet on right side only, each	3.00	3.50	6.50	8.00
" " " left " "	3.00	3.50	6.50	8.00
" " " both sides, "	3.50	4.00	7.00	10.00
" " " right side and 2-inch top inlet, "	----	5.50	7.00	9.00
" " " left " " " "	----	5.50	7.00	9.00
" " " both " " " "	----	6.00	7.50	10.00

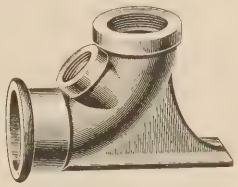
NOTE.—The 90° Inlet on Closet Tees is tapped, graded ¼ inch to the foot, unless otherwise ordered.



90° BASE ELBOW, WITH CLEANOUT.



90° ELBOW, WITH CLEANOUT.



90° BASE ELBOW, WITH CLEANOUT.
To connect Wrought Iron Pipe with Cast Iron Pipe.

90° Base Elbow, with Cleanout.

Size	2	3	4	5	6
Price, each	2.00	3.00	4.00	6.75	9.00

90° Elbow, with Cleanout.

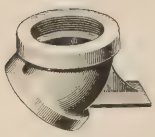
Size	2	3	4	5	6
Price, each	1.50	2.50	3.50	5.50	7.50

90° Base Elbow, with Cleanout.

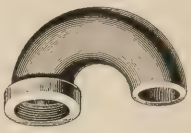
Size	3	4 x 3	4	5 x 4	5	6 x 4	6 x 5	6	8 x 6	8
Price, each	3.50	4.50	4.50	7.75	7.75	10.00	10.00	10.00	15.00	15.00

NOTE.—The Outlets on 90° Elbows are tapped, graded ¼ inch to the foot, unless otherwise ordered

Recessed Drainage Fittings.



45° ELBOW, WITH SHOE.



FOR CAPPING AIR INLET PIPE.

45° Elbow, with Shoe.

Size	2	3	4	5	6
Price, each	.90	1.50	2.20	3.25	4.25

Capping, for Capping Air Inlet Pipes.

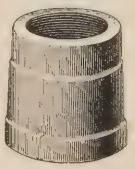
Size	3	4	5
Price, each	1.30	1.40	2.00



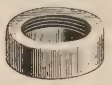
IRON BODY FERRULE WITH BRASS TRAP SCREW.



INCREASER.



TUCKER CONNECTION.



ROOF CONNECTION.

Trap Screw Ferrules.

Size	2	3	4	5	6
Price, each	.60	.80	1.00	1.60	2.20

Increasers.

Size	3 x 2	4 x 2	4 x 3	5 x 2	5 x 3	5 x 4	6 x 4	6 x 5	7 x 6	8 x 6	8 x 7
Price, each	1.00	1.50	1.50	2.00	2.00	2.00	3.00	3.00	4.00	5.00	5.00

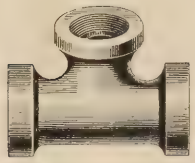
Tucker Connections.

Size	2	3	4	5	6
Price, each	.75	1.00	2.50	4.50	6.00

Roof Connections.

Size	2	3	4	5	6
Price, each	.50	.80	1.00	1.20	2.00

Recessed Drainage Fittings.



BASIN TEE.



BRASS SOLDERING NIPPLE.

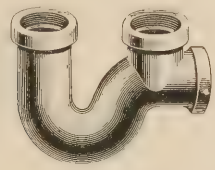
Basin Tees.

Size	$1\frac{1}{2}$	2	$2 \times 1\frac{1}{2}$
Price, each	1.25	1.35	1.53

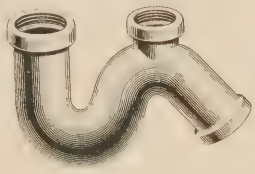
Brass Soldering Nipples.

Size	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4
Price, each	.42	.63	.84	1.17	2.34	4.00

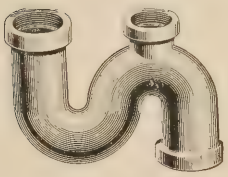
NOTE—The Inlet on Basin Tee is tapped, graded $\frac{1}{4}$ inch to the foot, unless otherwise ordered.



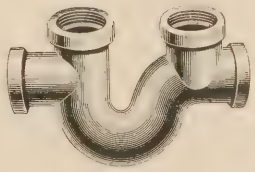
HALF S TRAP.



THREE-QUARTER S TRAP.



S TRAP.



RUNNING TRAP.

Half S Traps.

Size	2	3	4	5	6	8
Price, each	2.25	3.00	4.50	7.50	14.00	22.00

Three-quarter S Traps.

Size	2	3	4	5	6
Price, each	3.50	4.00	6.50	10.00	20.00

S Traps.

Size	2	3	4	5	6
Price, each	3.50	4.00	6.50	10.00	20.00

Running Traps.

Size	2	3	4	5	6	8
Price, each	2.40	3.50	5.00	8.00	15.00	25.00

NOTE—The Outlet on Half S and Inlet and Outlet on Running Traps are tapped, graded $\frac{1}{4}$ inch to the foot, unless otherwise ordered.

Galvanized and Brass Drainage Fittings furnished at special prices.

Sizes not listed above made to order at special net prices.

Lead and Tin Lined Lead Pipe.

Standard Lead Pipe.

Size, Inside Diameter												
	⅜	½	⅝	¾	1	1¼	1½	1¾	2
Letter E—Weight per foot	7 lbs. per rod	9 lbs. per rod	12 lbs. per rod	1 lbs.	1½ lbs.	2 lbs.	3 lbs.	---	---
" D— " "	10 oz.	¾ lbs.	1 lbs.	1¼	2	2½	3½	4	4¾
" C— " "	12 "	1 "	1½ "	1¾	2½	3	4¼	5	6
" B— " "	1 lbs.	1¼ "	2 "	2¼	3¼	3¾	5	6	7
" A— " "	1¼ "	1¾ "	2½ "	3	4	4¾	6½	7	8
" AA— " "	1½ "	2 "	2¾ "	3½	4¾	5¾	7½	8½	9
" AAA— " "	1¾ "	3 "	3½ "	4¾	6	6¾	8½	10	11¾
Special— " "	---	1½ "	---	2	---	---	8	6½	---

Thickness of Lead Pipe in One-One-Hundreths Inches.

Size, Inside Diameter									
	⅜	½	⅝	¾	1	1¼	1½	1¾	2
Letter E—Thickness per $\frac{1}{100}$ in.	.05	.07	.08	.08	.10	.10	.12	---	---
" D— " " "	.06	.09	.09	.10	.11	.12	.14	.13	.15
" C— " " "	.08	.11	.13	.12	.14	.14	.17	.17	.18
" B— " " "	.12	.13	.16	.16	.17	.16	.19	.19	.22
" A— " " "	.16	.16	.20	.20	.21	.19	.23	.23	.25
" AA— " " "	.19	.19	.22	.23	.24	.25	.25	.27	.27
" AAA— " " "	.27	.25	.25	.30	.30	.28	.28	.30	.30
Special— " " "	---	.14	---	.14	---	---	.27	.21	---
" " " "	$\frac{7}{16}$ 13 oz., and $\frac{7}{16}$ 1 lb. per foot, and ½ inch, 2½ lbs. per foot.								

Lead Pipe in Lengths of 10 Feet.

Thickness	⅜	$\frac{5}{16}$	¼	$\frac{3}{16}$
Size. Weight per length	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
2½ " " "	17 0	14 0	11 0	8 0
3 " " "	20 0	16 0	12 0	9 0
3½ " " "	22 0	18 0	15 0	9 8
4 " " "	25 0	21 0	16 0	12 8
4½ " " "	-- -	-- -	18 0	14 0
5 " " "	31 0	25 0	20 0	15 0
6 " " "	37 0	30 0	24 8	18 0

Table Showing the Weight of Pipe which Should be Used for a Given Head of Water.

Head or number of feet fall.	Pressure per square inch.	Calibre and Weight per Foot.					
		Letter.	⅜ inch.	½ inch.	⅝ inch.	¾ inch.	1 inch.	1¼ inch.
30 feet.	15 lbs.	D	10 oz.	¾ lb.	1 lb.	1¼ lbs.	2 lbs.	2½ lbs.
50 "	25 "	C	12 "	1 "	1½ lbs.	1¾ "	2½ "	3 "
75 "	38 "	B	1 lb.	1¼ lbs.	2 "	2¼ "	3¼ "	3¾ "
100 "	50 "	A	1¼ lbs.	1¾ "	2½ "	3 "	4 "	4¾ "
150 "	75 "	AA	1½ "	2 "	2¾ "	3½ "	4¾ "	5¾ "
200 "	100 "	AAA	1¾ "	3 "	3½ "	4¾ "	6 "	6¾ "

Lead Waste Pipe.

1½ in. 2 and 3 lbs. per ft.
2 " 3 and 4 " "
3 " 3½, 5 & 6 " "
3½ " 4 lbs. "
4 in. 5, 6 & 8 lbs. per ft.
4½ " 6 and 8 " "
5 " 8, 10 & 12 lbs. "
6 " 12 lbs. "

Block Tin Pipe.

⅜ in. 4, 5, 6 & 8 oz. per ft.
½ " 6, 7½ & 10 oz. "
⅝ " 8 and 10 oz. "
¾ " 10 and 12 oz. "
1 in. 15 and 18 oz. per ft.
1¼ " 1¼ and 1½ lbs. "
1½ " 2 and 2½ lbs. "
2 " 2½ and 3 lbs. "
Special sizes made to order.

Lead and Tin Tubing.

⅛ inch. ------- ¼ inch.

Standard Lead Traps.



FULL S TRAP.



¾ S TRAP.



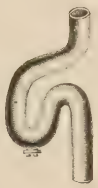
½ S TRAP.



RUNNING TRAP.



RUNNING Y TRAP.



BAG TRAP.

Standard Lead Traps.

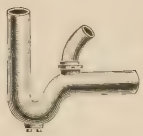
Weight Per Foot. Pounds.	Size. Inches.	Full S.	¾ S.	½ S.	Running.	Running Y.	Bag.
1½	1¼	.58	.55	.51	.48	.52	.68
2	1¼	.73	.66	.64	.58	.65	.87
2½	1¼	.87	.81	.77	.70	.74	1.06
2¼	1½	.90	.81	.75	.72	.76	1.08
3	1½	1.03	.94	.87	.87	.94	1.28
3½	1½	1.25	1.15	1.09	1.03	1.09	1.54
3¼	2	1.38	1.30	1.20	1.13	1.34	1.73
4	2	1.65	1.53	1.42	1.32	1.45	2.08
4½	2	1.85	1.73	1.57	1.46	1.61	2.33
5	3	2.69	2.62	2.24	2.09	2.46	3.35
6	3	3.09	2.97	2.58	2.35	2.88	3.96
6	4	3.25	3.07	2.49	2.53	3.15	4.77
8	4	4.30	3.95	3.25	3.28	4.05	6.30
8	4½	5.00	4.90	4.02	3.95	4.92	6.85
10	4½	6.06	5.89	4.84	4.80	5.89	8.30



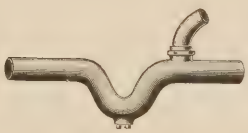
FULL S, VENTED.



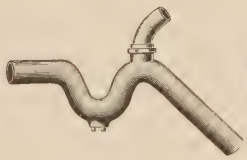
¾ S, VENTED.



½ S, VENTED.



RUNNING, VENTED.



RUNNING Y, VENTED.



BAG, VENTED.

Standard Lead Traps—Vented.

Weight Per Foot. Pounds.	Size. Inches.	Full S.	¾ S.	½ S.	Running.	Running Y.	Bag.
1½	1¼	1.38	1.35	1.31	1.28	1.32	1.48
2	1¼	1.53	1.46	1.44	1.38	1.45	1.67
2½	1¼	1.67	1.61	1.57	1.50	1.54	1.86
2¼	1½	1.85	1.76	1.70	1.67	1.71	2.03
3	1½	1.98	1.89	1.82	1.82	1.89	2.23
3½	1½	2.20	2.10	2.04	1.98	2.04	2.49
3¼	2	2.33	2.25	2.15	2.08	2.29	2.68
4	2	2.60	2.48	2.37	2.27	2.40	3.03
4½	2	2.80	2.68	2.52	2.41	2.56	3.28
5	3	3.94	3.87	3.49	3.34	3.71	4.60
6	3	4.34	4.22	3.83	3.60	4.13	5.21
6	4	4.50	4.32	3.74	3.78	4.40	6.02
8	4	5.55	5.20	4.50	4.53	5.30	7.55

Extra Long Lead Traps.



No. 1.
EXTRA LONG FULL S.



No. 2.
EXTRA LONG FULL S.



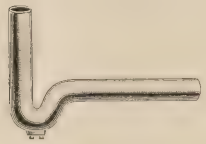
No. 12.
EXTRA LONG ¾ S.



No. 11.
EXTRA LONG ¾ S.



No. 3.
EXTRA LONG ½ S.



No. 4.
EXTRA LONG ½ S.

Extra Long Lead Traps, Without Vent.

Weight per foot. Pounds.	Size. Inches.	Full S.	¾ S.	½ S.	Running.	Running Y.	Bag.
1½	1¼	.93	.85	.76	.82	.83	1.09
2	1¼	1.19	1.04	.95	1.01	1.05	1.38
2½	1¼	1.44	1.28	1.14	1.23	1.23	1.67
2¼	1½	1.36	1.19	1.02	1.15	1.15	1.58
3	1½	1.64	1.43	1.22	1.41	1.45	1.91
3½	1½	1.95	1.72	1.50	1.65	1.52	2.24
3¼	2	2.00	1.76	1.55	1.67	1.82	2.34
4	2	2.40	2.08	1.83	1.98	2.01	2.80
4½	2	2.69	2.33	2.02	2.18	2.23	3.11



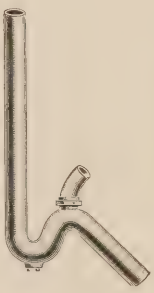
No. 7.
EXTRA LONG FULL S, VENTED.



No. 8.
EXTRA LONG FULL S, VENTED.



No. 17.
EXTRA LONG ¾ S, VENTED.



No. 18.
EXTRA LONG ¾ S, VENTED.



No. 9.
EXTRA LONG ½ S, VENTED.



No. 10.
EXTRA LONG ½ S, VENTED.

Extra Long Lead Traps—Vented.

Weight per foot. Pounds.	Size. Inches.	Full S.	¾ S.	½ S.	Running.	Running Y.	Bag.
1½	1¼	1.73	1.65	1.56	1.62	1.63	1.89
2	1¼	1.99	1.84	1.75	1.81	1.85	2.18
2½	1¼	2.24	2.08	1.94	2.03	2.03	2.47
2¼	1½	2 31	2.14	1.97	2.10	2.10	2.53
3	1½	2.59	2.38	2.17	2.36	2.40	2.86
3½	1½	2.90	2.67	2.45	2.60	2.47	3.19
3¼	2	2.95	2.71	2.50	2.62	2.77	3.29
4	2	3.35	3.03	2.78	2.93	2.96	3.75
4½	2	3.64	3.28	2.97	3.13	3.18	4.06

Prices include Brass Drain Screws. 2-inch Vented Traps have 1½-inch Vent. If 2-inch Vent is desired, add 30 cents to list.

The different weights are the weight per running foot.

In ordering specify weight of Trap wanted.

Lead Bends and Sheet Lead.



SHORT LEAD BEND.



LONG LEAD BEND.

Lead Bends.

Dimension Scale.	Short Bends. Center to Ends.	Long Bends. Center to Ends.
1¼-inch	6 inches 3½	6 inches.
1½ "	7 " 4	7 "
2 "	7¾ " 3¾	7¾ "
3 "	8¼ " 4¼	8¼ "
4 "	10 " 5½	10 "
4½ "	11 " 6¼	11 "

Extension Bends.

1¼-INCH.

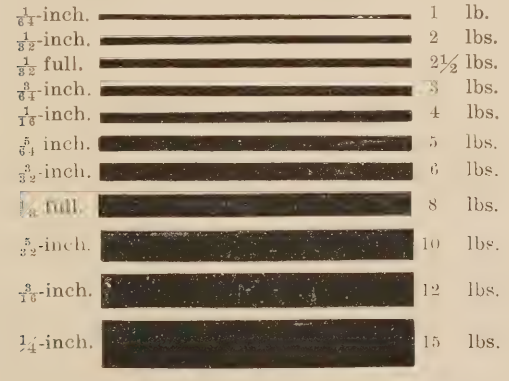
Weight of Lead per Running Ft.	1½lb.	2lb.	2½lb.
Short Inlet End x 12 in. on Out. End	.40	.52	.60
" " x 15 in. " " "	.47	.62	.72
" " x 18 in. " " "	.55	.72	.84
" " x 20 in. " " "	.60	.79	.92
Long Inlet " x 12 in. " " "	.46	.60	.70
" " x 15 in. " " "	.54	.70	.82
" " x 18 in. " " "	.62	.80	.94
" " x 20 in. " " "	.67	.87	1.02
For each inch of excess length over listed size on any shape of Trap or Bend add to the list of nearest listed size	.03¼	.04¼	.05

1½-INCH.

Weight of Lead per Running Ft.	2¼lb.	3lb.	3½lb.
Short Inlet End x 12 in. on Out. End	.56	.75	.90
" " x 15 in. " " "	.67	.89	1.07
" " x 18 in. " " "	.77	1.03	1.24
" " x 20 in. " " "	.84	1.12	1.35
Long Inlet " x 12 in. " " "	.67	.89	1.07
" " x 15 in. " " "	.77	1.03	1.24
" " x 18 in. " " "	.88	1.17	1.41
" " x 20 in. " " "	.95	1.26	1.52
For each inch of excess length over listed size on any shape of Trap or Bend add to the list of nearest listed size	.04½	.06	.07

Sheet Lead.

Approximate thickness and weight of Sheet Lead per Square Foot.



1/64-inch.	1 lb.
1/32-inch.	2 lbs.
1/32 full.	2½ lbs.
3/64-inch.	3 lbs.
1/16-inch.	4 lbs.
5/64 inch.	5 lbs.
3/32-inch.	6 lbs.
1/8 full.	8 lbs.
5/32-inch.	10 lbs.
3/16-inch.	12 lbs.
1/4-inch.	15 lbs.

1¼-INCH.	1½ lb.	2 lb.		2½ lb.
Long, each	.30	.41		.50
Short, "	.25	.31		.34
1½-INCH.	2¼ lb.	3 lb.		3½ lb.
Long, each	.50	.66		.79
Short, "	.38	.51		.62
2 AND 3 INCH.	2 in. 3¼ lb.	2 in. 4 lb.	2 in. 4½ lb.	3 in. 5 lb.	3 in. 6 lb.
Long, each	.78	1.00	1.05	1.39	1.60
Short, "	.57	.69	.80	1.09	1.21
4 AND 4½ INCH.	4 in. 6 lb.	4 in. 8 lb.	4½ in. 8 lb.	4½ in. 10 lb.	
Long, each	1.95	2 40	2.98	3.68	
Short, "	1.50	1.84	2.55	2.90	

Extension Bends.

2-INCH.

Weight of Lead per Running Ft.	3¼lb.	4lb.	4½lb.
Short Inlet End x 12 in. on Out. End	.79	.99	1.08
" " x 15 in. " " "	.94	1.17	1.28
" " x 18 in. " " "	1.09	1.36	1.49
" " x 20 in. " " "	1.19	1.49	1.63
Long Inlet " x 12 in. " " "	.99	1.24	1.35
" " x 15 in. " " "	1.14	1.42	1.56
" " x 18 in. " " "	1.29	1.61	1.76
" " x 20 in. " " "	1.39	1.74	1.90
For each inch of excess length over listed size on any shape of Trap or Bend add to the list of nearest listed size	.06½	.07¾	.08½

Extension Bends.

3 AND 4 INCH.

Size	3-INCH.		4-INCH.	
Wt. of Lead per Running Ft.	5 lb.	6 lb.	6 lb.	8 lb.
Short Inlet End x 12 in. on O. E.	1.39	1.57	1.70	2.09
" " x 15 in. " "	1.65	1.87	2.00	2.45
" " x 18 in. " "	1.90	2.16	2.30	2.81
" " x 20 in. " "	2.07	2.35	2.48	3.04
Long Inlet " x 12 in. " "	1.73	1.96	2.15	2.62
" " x 15 in. " "	1.99	2.25	2.44	2.98
" " x 18 in. " "	2.24	2.54	2.73	3.34
" " x 20 in. " "	2.42	2.74	2.92	3.58
For each inch of excess length over listed size on any shape of Trap or Bend add to the list of nearest listed size	.10¾	.12	.12	.15

Short Inlet Ends are same dimensions as Inlets on Short Bends of corresponding size. Long Inlet Ends are the same as Long Bends.

In ordering specify the weight of Bend wanted.

Sheet Lead.

Weights per foot, 2½, 3, 3½, 4, 4½, 5, 6, 8, 10 pounds and upward.

Lighter weights rolled to order at special prices.

Special attention given to Dimension Sheets for chemical purposes.

One square foot of Sheet Lead one inch thick weighs 60 pounds.

One square foot of Sheet Tin one inch thick weighs 40 pounds.

Sheet Lead cut to any lengths required. Greatest possible width of sheet, 11 feet.

Ordinary rolls contain about 100 square feet.

Sink Fixtures, Ferrules, Pipe Benders and Joint Runners.



Iron Sink Traps for Iron or Lead Pipe Connections.

Half S	1.25
Three-quarter S	1.25
Full S	1.25



Sink Strainers—Open.

Painted,	per dozen	1.50
Galvanized,	"	2.60
Enameled,	"	3.00



Sink Strainers with Plug.

Painted,	per dozen	3.25
Galvanized,	"	5.00
Enameled	"	10.00



Sink Couplings for Lead Pipe.

Painted,	per dozen	1.50
Galvanized,	"	2.00



Sink Couplings for Iron Pipe.

Painted,	per dozen	9.00
Galvanized,	"	10.80

Brass Ferrules.



STRAIGHT.



REDUCING.



TRAP SCREW.



EIGHTH BEND.

Brass Ferrules.

Size	2 x 1½	2	3	4	5	6
Straight, Standard, each	.20	.18	.40	.50	1.50	1.80
Straight, Heavy, "	.27	.27	.55	.75	1.75	2.00
With Trap Screw, Standard, "	---	.40	.75	1.05	2.55	3.30
" " Heavy, "	---	.60	.85	1.20	2.75	3.60
Eighth Bend, Standard, "	---	.50	.90	1.05	----	----
" Heavy, "	---	.75	1.10	1.50	----	----

New York Regulation Brass Ferrules.

Size	2	3	4	5	6
Reducing Ferrules, each	.33	.60	.75	1.50	1.80
Eighth Bend "	.70	---	1.50	----	----

New York Regulation Brass Trap Screw Ferrules.

Size	2	3	4	5	6
Brass, each	.95	1.45	2.05	4.10	5.25
Iron Body with Brass Plug, each	.60	.72	.85	1.65	1.95



PIPE BENDER.

For bending Lead Pipe, Brass or Copper Tubing, it is the only practical device.
Made in four sizes, 1 inch, 1¼ inch, 1½ inch and 2 inch.

Each ---- 1.50



SQUARE JOINT RUNNER APPLIED TO PIPE.

No. 1.	¾-inch square, for 2, 3 and 4 inch pipe	1.40
" 2.	¾ " " " 4, 5 " 6 "	1.65
" 3.	1 " " " 6, 8 " 10 "	2.50
" 4.	1 " " " 10, 12 " 14 "	3.30

Larger and Special Sizes to order.

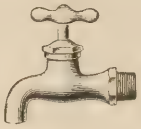
Compression Work.



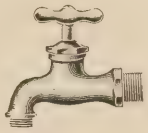
No. 1.
COMPRESSION PLAIN BIBB.
Lead Pipe.



No. 2.
COMPRESSION HOSE BIBB.
Lead Pipe.



No. 3.
COMPRESSION PLAIN BIBB.
Iron Pipe.



No. 4.
COMPRESSION HOSE BIBB.
Iron Pipe.

Compression Plain and Hose Bibbs, Lead and Iron Pipe.

Size													
								⅜	½	⅝	¾	1	1¼	1½	2
No. 1.	Comp.	Plain		Bibbs,	Lead Pipe,	Finished,	per doz.	10.00	11.00	13.00	18.00	34.00	52.00	80.00	160.00
No. 1.	"	"		Bibb,	"	Nickel Plated,	"	12.00	13.00	15.00	20.50	37.00	----	----	----
No. 1.	"	"		Bibbs,	"	Rough,	"	9.50	10.50	12.00	17.00	30.00	44.00	68.00	140.00
No. 2.	"	Hose		"	"	Finished,	"	12.00	13.00	15.00	20.00	37.00	56.00	86.00	170.00
No. 2.	"	"		"	"	Nickel Plated,	"	14.00	15.50	17.50	22.50	40.00	----	----	----
No. 2.	"	"		"	"	Rough,	"	11.50	12.50	14.00	19.00	33.00	48.00	74.00	150.00
No. 3.	"	Plain		"	Iron Pipe,	Finished,	"	12.00	13.00	15.00	20.00	37.00	56.00	86.00	170.00
No. 3.	"	"		"	"	Nickel Plated,	"	14.00	15.50	17.50	22.50	40.00	----	----	----
No. 3.	"	"		"	"	Rough,	"	11.50	12.50	14.00	19.00	33.00	48.00	74.00	150.00
No. 4.	"	Hose		"	"	Finished,	"	14.00	15.00	17.00	22.00	40.00	60.00	92.00	180.00
No. 4.	"	"		"	"	Nickel Plated,	"	16.00	17.50	19.50	24.50	43.00	----	----	----
No. 4.	"	"		"	"	Rough,	"	13.50	14.50	16.00	21.00	36.00	52.00	80.00	160.00



No. 5.
COMPRESSION PLAIN BIBB, SCREW ON TAIL.



No. 6.
COMPRESSION HOSE BIBB, SCREW ON TAIL.

Compression Plain and Hose Bibb, Screw on Tail.

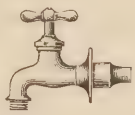
Size								⅜	½	⅝	¾	1
No. 5.	Compression	Plain	Bibb,	Screw on Tail,	Finished,	per dozen		12.00	13.00	15.00	20.00	37.00
No. 5.	"	"	"	"	Nickel Plated,	"		14.00	15.50	17.50	22.50	40.00
No. 6.	"	Hose	"	"	Finished,	"		14.00	15.00	17.00	22.00	40.00
No. 6.	"	"	"	"	Nickel Plated,	"		16.00	17.50	19.50	24.50	43.00



No. 7.
COMPRESSION SOLID FLANGE BIBB.
Iron Pipe.



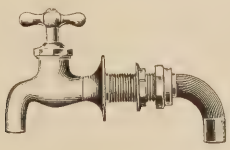
No. 8.
COMPRESSION PLAIN BIBBS,
FLANGE AND THIMBLE.



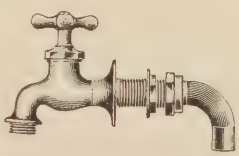
No. 9.
COMPRESSION HOSE BIBB,
FLANGE AND THIMBLE.

Compression Solid Flange Bibb, Plain and Hose, and Plain and Hose Bibbs Flanged Thimble.

Size									⅜	½	⅝	¾	1
No. 7.	Comp.	Solid	Flange,	Plain	Bibb,	Iron Pipe,	Finished,	per dozen	----	16.00	17.50	25.00	46.00
No. 7.	"	"	"	"	"	Nickel Plated,	"	----	----	18.50	20.00	27.50	49.00
No. 7½.	"	"	"	Hose	"	Finished,	"	----	----	18.00	19.00	27.00	49.00
No. 7½.	"	"	"	"	"	Nickel Plated,	"	----	----	20.50	22.00	29.50	52.00
No. 8.	"	Plain	Bibbs,	Flange and	Thimble,	Finished,	"	----	16.00	18.00	21.00	28.00	51.00
No. 8.	"	"	"	"	"	Nickel Plated,	"	----	19.00	21.50	24.50	32.00	55.00
No. 9.	"	Hose	"	"	"	Finished,	"	----	18.00	20.00	23.00	30.00	54.00
No. 9.	"	"	"	"	"	Nickel Plated,	"	----	21.00	23.50	26.50	34.00	58.00



No. 10.
COMPRESSION PLAIN BIBB WITH FLANGE,
NUT AND BENT COUPLING.



No. 11.
COMPRESSION HOSE BIBB WITH FLANGE,
NUT AND BENT COUPLING.

Compression Plain and Hose Bibb with Flange, Nut and Bent Coupling.

Size									½	⅝	¾
No. 10.	Comp.	Plain	Bibb,	with	Flange,	Nut and	Bent	Coupling, Finished, per dozen	25.00	32.00	44.00
No. 10.	"	"	"	"	"	"	"	Nickel Plated, "	28.50	35.50	48.00
No. 11.	"	Hose	"	"	"	"	"	Finished, "	27.00	34.00	46 00
No. 11.	"	"	"	"	"	"	"	Nickel Plated, "	30.50	37.50	50 00

Compression Work.



COMPRESSION WASH TRAY BIBB, FLANGE AND THIMBLE.



COMPRESSION WASH TRAY BIBB, FLANGE, NUT AND BENT COUPLING.

Compression Wash Tray Bibb, Flange and Thimble.

Size						
		⅜	½	⅝	¾	1
Comp. Wash Tray Bibb, Flange and Thimble, Finished, per dozen		17.00	19.00	22.00	30.00	53.00
" " " " Nickel Plated, "		----	20.00	22.50	25.50	34.00	57.00
" " without Thimble, Finished, "		----	----	17.00	19.50	27.00	----
" " " " Nickel Plated, "		----	----	19.50	22.00	29.50	----

Compression Wash Tray Bibb, Flange, Nut and Bent Coupling, Straight or Side Handle Pattern.

Size	½	⅝	¾
Comp. Wash Tray Bibb, Flange, Nut and Bent Coupling, Finished, per dozen	26.00	33.00	46.00
" " " " " Nickel Plated, per dozen	29.50	36.50	50.00
Add for Stuffing Box, per dozen	2.00	2.00	3.00



COMPRESSION STOP. Lead Pipe.



COMPRESSION STOP AND WASTE. Lead Pipe.



COMPRESSION STOP. Iron Pipe.



COMPRESSION STOP AND WASTE. Iron Pipe.

Compression Stops and Stops and Wastes for Lead and Iron Pipe.

Size	⅜	½	⅝	¾	1	1¼	1½
Comp. Stop, Lead Pipe, Finished, per dozen	11.00	12.00	14.00	22.00	36.00	56.00	96.00
" " Nickel Plated, "	13.00	14.50	16.50	24.50	39.00	60.00	----
" " Rough, "	10.50	11.50	13.00	21.00	32.00	48.00	84.00
" and Waste, Lead Pipe, Finished, per dozen	----	16.50	19.50	27.00	44.00	----	----
" " " Nickel Plated, "	----	19.00	22.00	29.50	47.00	----	----
" " " Rough, "	----	15.00	18.00	25.50	42.00	----	----
" Iron Pipe, Finished, per dozen	13.00	14.00	16.00	24.00	40.00	60.00	102.00
" " Nickel Plated, "	15.00	16.50	18.50	26.50	43.00	64.00	----
" " Rough, "	12.50	13.50	15.00	23.00	36.00	52.00	90.00
" and Waste Iron Pipe, Finished, per dozen	----	18.50	21.50	29.00	48.00	----	----
" " " Nickel Plated, "	----	21.00	24.00	31.50	51.00	----	----
" " " Rough, "	----	17.00	20.00	27.50	46.00	----	----



LAVATORY STOP.



LAVATORY STOP. Angle Pattern.

Compression Lavatory Stops.

Size	⅜	½
Lavatory Stop, Nickel Plated, per dozen	8.40	9.36
" " with Stuffing Box, Nickel Plated, per dozen	9.40	10.30
" " Angle Pattern, " "	11.00	12.00



Fig. 52. COMPRESSION SILL COCK.



Fig. 53. COMPRESSION SILL COCK.

Compression Sill Cocks.

Size		½	¾
Fig. 52. Finished, per dozen		28.00	28.00
" 52. Nickel Plated, "		32.00	32.00
" 53. Finished, "		28.00	28.00
" 53. Nickel Plated, "		32.00	32.00

Compression Work.



COMPRESSION PLAIN BIBB.
Loose Key. Lead Pipe.



COMPRESSION PLAIN BIBB.
Loose Key. Iron Pipe.



COMPRESSION PLAIN BIBB.
Loose Key, Flange and Thimble.

Compression Loose Key Bibbs.

Size								½	⅝	¾	1
Comp.	Plain	Bibb,	Loose Key,	Lead Pipe,	Finished,	per dozen		17.00	19.00	25.00	42.00
"	"	"	"		Nickel Plated,	"		19.50	21.50	27.50	45.00
"	"	"	"		Rough,	"		16.50	18.00	24.00	38.00
"	Hose	"	"		Finished,	"		19.00	21.00	27.00	45.00
"	"	"	"		Nickel Plated,	"		21.50	23.50	29.50	48.00
"	"	"	"		Rough,	"		18.50	20.00	26.00	41.00
"	Plain	"	"	Iron Pipe,	Finished,	"		19.00	21.00	27.00	45.00
"	"	"	"		Nickel Plated,	"		21.50	23.50	29.50	48.00
"	"	"	"		Rough,	"		18.50	20.00	26.00	41.00
"	Hose	"	"		Finished,	"		21.00	23.00	29.00	48.00
"	"	"	"		Nickel Plated,	"		23.50	25.50	31.50	51.00
"	"	"	"		Rough,	"		20.50	22.00	28.00	44.00
"	Plain	"	Flange and Thimble,		Finished,	per dozen		24.00	27.00	35.00	----
"	"	"	"	"	Nickel Plated,	"		27.50	30.50	39.00	----
"	Hose	"	"	"	Finished,	"		26.00	29.00	37.00	---
"	"	"	"	"	Nickel Plated,	"		29.50	32.50	41.00	---



Fig. 10.
COMPRESSION PLAIN BIBB.
With detachable Shank
for Iron Pipe.



Fig. 31.
COMPRESSION SINK BIBB.
With China Plate Handles
for Iron Pipe.



Fig. 32.
COMPRESSION SINK BIBB.
With China Plate Handles,
Flange, Nut and Thimble.

Compression Plain and Hose Bibbs, with Detachable Shank for Iron Pipe.

Size								½	⅝	¾
Fig. 10.	Comp.	Plain	Bibb,	Detachable Shank,	Iron Pipe,	Finished,	per dozen	18.00	20.00	25.00
" 10.	"	"	"	"	"	Nickel Plated,	"	20.50	22.50	27.50
" 10.	"	Hose	"	"	"	Finished,	"	20.00	22.00	27.00
" 10.	"	"	"	"	"	Nickel Plated,	"	22.50	24.50	29.50

Compression Sink Bibbs with China Plate Handles for Iron Pipe.

Size								¾
Fig. 31.	Comp.	Sink	Bibb,	Plain, with China Plate Handles,	Iron Pipe,	Finished,	per dozen	27.00
" 31.	"	"	"	"	"	Nickel Plated,	"	30.00
" 31.	"	Hose,	"	"		Finished,	"	31.00
" 31.	"	"	"	"		Nickel Plated,	"	34.00

Compression Sink Bibbs with China Plate Handles, Flange, Nut and Thimble.

Size								¾
Fig. 32.	Comp.	Sink	Bibb	Plain	China Plate Handles,	Flange, Nut and Thimble,	Finished, per dozen	33.00
" 32.	"	"	"	"	"	"	N. Pltd., "	36.00
" 32.	"	Hose	"	"	"	"	Finished, "	37.00
" 32.	"	"	"	"	"	"	N. Pltd., "	40.00

NOTE.—If without Nut and Thimble, deduct, per dozen---- 5.00

Fuller Bibbs and Bracket Basin Cocks.



FULLER PLAIN BIBB.
Iron Pipe.



FULLER HOSE BIBB.
Iron Pipe.



FULLER PLAIN BIBB.
Lead Pipe.



FULLER HOSE BIBB.
Lead Pipe.

Fuller Plain and Hose Bibbs, Lead and Iron Pipe.

Size					½	⅝	¾	1
Fuller Plain Bibb	Iron Pipe,	Finished,	per dozen		21.00	24.00	30.00	40.00
" " "	" "	Nickel Plated,	"		25.00	28.00	36.00	50.00
" Hose "	" "	Finished,	"		24.00	28.00	34.00	44.00
" " "	" "	Nickel Plated,	"		28.00	32.00	40.00	54.00
" Plain "	Lead Pipe,	Finished,	"		18.00	20.00	26.00	36.00
" " "	" "	Nickel Plated,	"		22.00	24.00	32.00	46.00
" Hose "	" "	Finished,	"		21.00	24.00	30.00	40.00
" " "	" "	Nickel Plated,	"		25.00	28.00	36.00	50.00



FULLER PLAIN BIBB.
Flanged for Iron Pipe.



FULLER HOSE BIBB.
Flanged for Iron Pipe.



FULLER PLAIN BIBB.
Flange and Thimble.



FULLER HOSE BIBB.
Flange and Thimble.

Fuller Plain and Hose Bibbs, Flanged for Iron Pipe and Flange and Thimble.

Size					½	⅝	¾	1
Fuller Plain Bibb	Flanged for Iron Pipe,	Finished,	per dozen		24.00	26.00	33.00	44.00
" " "	" "	Nickel Plated,	"		30.00	32.00	40.00	55.00
" Hose "	" "	Finished,	"		27.00	30.00	37.00	48.00
" " "	" "	Nickel Plated,	"		33.00	36.00	44.00	58.00
" Plain "	Flange and Thimble,	Finished,	"		26.00	28.00	36.00	48.00
" " "	" "	Nickel Plated,	"		32.00	34.00	42.00	58.00
" Hose "	" "	Finished,	"		29.00	32.00	40.00	52.00
" " "	" "	Nickel Plated,	"		35.00	38.00	46.00	62.00



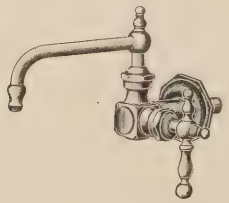
FULLER PLAIN BIBB.
Flange Nut and Bent Coupling.



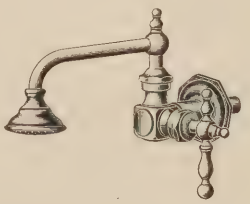
FULLER WASH TRAY BIBB.
Flange and Thimble.

Fuller Plain Bibb, Flange Nut and Bent Coupling and Fuller Wash Tray Bibbs, Flange and Thimble.

Size					½	⅝	¾	1
Fuller Plain Bibbs,	Flange Nut and Bent Coupling,	Finished,	per dozen		35.00	40.00	54.00	72.00
" " "	" "	Nickel Plated,	per dozen		41.00	46.00	60.00	82.00
" Wash Tray Bibb,	Flange and Thimble,	Finished,	"		26.00	28.00	36.00	50.00
" " "	" "	Nickel Plated,	"		32.00	34.00	42.00	60.00



FULLER SWING BRACKET BASIN COCK.
Without Shampoo Sprinkler.



FULLER SWING BRACKET BASIN COCKS.
With Shampoo Sprinkler.

Fuller Swing Bracket Basin Cocks.

Swing Bracket Basin Cock	without	Shampoo Sprinkler,	Finished,	per dozen				40.00
" " " "	"	"	Nickel Plated,	"				48.00
" " " "	with	"	Finished,	"				52.00
" " " "	"	"	Nickel Plated,	"				60.00

Fuller Bibbs and Trimmings.



Fig. 103.
FULLER PLAIN BIBB, 6-INCH EXTENSION.
Flanged, Male, for Iron Pipe.



Fig. 104.
FULLER PLAIN BIBB, 8-INCH EXTENSION.
Flanged, Male, for Iron Pipe.

Fuller Plain and Hose Bibbs, 6-inch Extension, Flanged, Male, Iron Pipe.

Size											½	⅝	¾
Fig. 103.	Fuller Plain Bibb, 6-inch Extension, Flanged, Male, Iron Pipe, Finished, per doz										40.00	47.00	61.00
" 103.	"	"	"	6	"	"	"	"	"	Nickel Plated, "	44.00	51.00	67.00
" 103.	"	Hose	"	6	"	"	"	"	"	Finished, "	43.00	51.00	65.00
" 103.	"	"	"	6	"	"	"	"	"	Nickel Plated, "	47.00	55.00	71.00

Fuller Plain and Hose Bibbs, 8-inch Extension, Flanged, Male, Iron Pipe.

Size											½	⅝	¾
Fig. 104.	Fuller Plain Bibb, 8-inch Extension, Flanged, Male, Iron Pipe, Finished, per doz										46.00	53.00	67.00
" 104.	"	"	"	8	"	"	"	"	"	Nickel Plated, "	50.00	57.00	73.00
" 104.	"	Hose	"	8	"	"	"	"	"	Finished, "	49.00	57.00	71.00
" 104.	"	"	"	8	"	"	"	"	"	Nickel Plated, "	53.00	61.00	77.00

Add for Lead Pipe Thimbles, per dozen, ½-inch, 2.50; ⅝-inch, 2.50; ¾-inch, 3.00.



EXTENSION FOR FULLER BIBB.

Extensions for Fuller Bibbs.

Length					1½	2	2½	3
Size, ½-inch, Finished, per dozen					5.00	6.00	7.00	8.00
" ⅝ "	"	"	"		6.00	7.00	8.00	9.00
" ¾ "	"	"	"		10.00	12.00	14.00	16.00
" ½ "	Nickel Plated,	"			7.00	8.00	9.00	10.00
" ⅝ "	"	"	"		8.00	9.00	10.00	11.00
" ¾ "	"	"	"		12.00	14.00	16.00	18.00

Fuller Fancy Handles.



Fig. 166.
BRASS MARKED, HOT AND COLD.
Add to price of Cocks, per doz., 2.00.



Fig. 167.
EBONY OR IVORY.
Add to price of Cocks, per doz., 12.00.



Fig. 168.
SHORT CHINA.
Add to price of Cocks, per doz., 15.00.



Fig. 169.
LONG CHINA.
Add to price of Cocks, per doz., 15.00.



Fig. 170.
CHINA MARKED, HOT AND COLD.
Add to price of Cocks, per doz., 15.00.

If wanted separately, without Cocks, add 4.00 per dozen to above prices.

Nickel Plated Basin Cock Couplings.



Fig. 202.
FOR LEAD PIPE.
Add to price of Cocks, per doz., 1.00.



Fig. 203.
FOR IRON PIPE, MALE.
Add to price of Cocks, per doz., 2.00.



Fig. 204.
FOR IRON PIPE, FEMALE.
Add to price of Cocks,
⅜-inch, per doz., 6.00.
½ " " 7.00.



Fig. 205.
FOR IRON PIPE, FEMALE, WITH SLIP JOINT.
Add to price of Cocks,
⅜-inch, per doz., 8.00.
½ " " 9.00.

If wanted separately, without Cocks, add 2.00 per dozen to above prices, except Fig. 205.

Self-Closing Work.



DOHERTY S. C.
PLAIN BIBB.
Lead Pipe.



DOHERTY S. C.
PLAIN BIBB.
Iron Pipe.



DOHERTY S. C.
HOSE BIBB.
Iron Pipe.



DOHERTY S. C.
PLAIN BIBB.
Screw on Tail, I. P.

Doherty Self-Closing Plain and Hose Bibbs, Lead Pipe, Iron Pipe and Screw on Tail.

Size									½	⅝	¾
Doherty S. C. Plain Bibb Lead Pipe,							Finished,	per dozen	24.00	27.00	33.00
"	"	"	"	"	"		Nickel Plated,	"	28.00	31.00	38.00
"	"	"	"	Iron	"		Finished,	"	28.00	31.00	37.00
"	"	"	"	"	"		Nickel Plated,	"	32.00	35.00	42.00
"	"	Hose	"	"	"		Finished,	"	31.00	34.00	39.00
"	"	"	"	"	"		Nickel Plated,	"	35.00	38.00	44.00
"	"	Plain	"	Screw on Tail,			Finished,	"	28.00	31.00	37.00
"	"	"	"	"	"	"	Nickel Plated,	per dozen	32.00	35.00	42.00



TELEGRAPH HANDLE S. C. PLAIN BIBB.
Iron Pipe.



TELEGRAPH HANDLE S. C. PLAIN BIBB.
Flange and Thimble.

Telegraph Handle Self-Closing Plain Bibbs, Iron Pipe, and Flange and Thimble.

Size									⅜	½	⅝	¾
Telegraph Handle S. C. Plain Bibb Iron Pipe,								Finished, per dozen	16.00	18.00	21.00	28.00
"	"	"	"	"	"	"	"	Nickel Plated, per dozen	18.00	20.50	23.50	30.00
"	"	"	"	"	Flange and Thimble,			Finished, per dozen	22.00	26.00	30.00	42.00
"	"	"	"	"	"	"	"	Nickel Plated, per dozen	24.00	28.50	32.50	44.50

Boston Self-Closing Plain and Hose Bibbs, Lead Pipe, Iron Pipe, Flanged for Iron Pipe and Screw on Tail.



BOSTON S. C.
PLAIN BIBB.
Lead Pipe.



BOSTON S. C.
PLAIN BIBB.
Iron Pipe.



BOSTON S. C.
HOSE BIBB.
Iron Pipe.



BOSTON S. C.
PLAIN BIBB.
Flanged Iron Pipe.



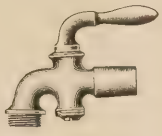
BOSTON S. C.
PLAIN BIBB.
Screw on Tail, I. P.

Size									⅜	½	⅝	¾
Boston S. C. Plain Bibb Lead Pipe,							Finished,	per dozen	----	24.00	27.00	33.00
"	"	"	"	"	"		Nickel Plated,	"	----	28.00	31.00	38.00
"	"	"	"	Iron	"		Finished,	"	27.00	27.00	30.00	37.00
"	"	"	"	"	"		Nickel Plated,	"	31.00	33.00	36.00	42.00
"	"	Hose	"	"	"		Finished,	"	----	31.00	34.00	39.00
"	"	"	"	"	"		Nickel Plated,	"	----	35.00	38.00	44.00
"	"	Plain	"	Flanged for Iron Pipe,			Finished,	per dozen	----	34.00	37.00	45.00
"	"	"	"	"	"	"	Nickel Plated,	"	----	38.00	41.00	49.00
"	"	Hose	"	"	"	"	Finished,	"	----	38.00	41.00	47.00
"	"	"	"	"	"	"	Nickel Plated,	"	----	42.00	45.00	52.00
"	"	Plain	"	Screw on Tail, Iron Pipe,			Finished,	"	27.00	27.00	30.00	37.00
"	"	"	"	"	"	"	Nickel Plated,	per dozen	31.00	33.00	36.00	42.00
"	"	Hose	"	"	"	"	Finished,	"	----	31.00	34.00	39.00
"	"	"	"	"	"	"	Nickel Plated,	"	----	35.00	38.00	44.00

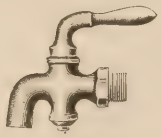
Ground Key Lever Handle Plain and Hose Bibbs.



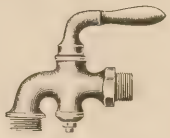
No. 12.
LEVER HANDLE
PLAIN BIBB.
Lead Pipe.



No. 13.
LEVER HANDLE
HOSE BIBB.
Lead Pipe.



No. 14.
LEVER HANDLE
PLAIN BIBB.
Iron Pipe.

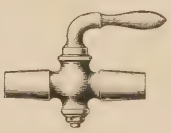


No. 15.
LEVER HANDLE
HOSE BIBB.
Iron Pipe.

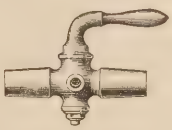
Lever Handle Plain and Hose Bibbs.

Size	¼	⅜	½	⅝	¾	1	1¼	1½	2
No. 12. Lever Handle, Plain Bibbs, Lead Pipe, Finished, per dozen	10.00	12.00	15.00	18.00	24.00	36.00	60.00	84.00	170.00
No. 12. Lever Handle, Plain Bibbs, Lead Pipe, Nickel Plated, per dozen	12.00	14.00	17.50	20.50	26.50	39.00	----	----	----
No. 12. Lever Handle, Plain Bibbs, Lead Pipe, Rough, per dozen	9.00	11.00	14.00	16.00	21.00	32.00	52.00	72.00	150.00
No. 13. Lever Handle, Hose Bibbs, Lead Pipe, Finished, per dozen	----	----	17.00	20.00	26.00	39.00	64.00	90.00	180.00
No. 13. Lever Handle, Hose Bibbs, Lead Pipe, Nickel Plated, per dozen	----	----	19.50	22.50	28.50	42.00	----	----	----
No. 13. Lever Handle, Hose Bibbs, Lead Pipe, Rough, per dozen	----	----	16.00	18.00	23.00	35.00	56.00	78.00	170.00
No. 14. Lever Handle, Plain Bibbs, Iron Pipe, Finished, per dozen	12.00	14.00	17.00	20.00	26.00	39.00	64.00	90.00	180.00
No. 14. Lever Handle, Plain Bibbs, Iron Pipe, Nickel Plated, per dozen	14.00	16.00	19.50	22.50	28.50	42.00	----	----	----
No. 14. Lever Handle, Plain Bibbs, Iron Pipe, Rough, per dozen	11.00	13.00	16.00	18.00	23.00	35.00	56.00	78.00	160.00
No. 15. Lever Handle, Hose Bibbs, Iron Pipe, Finished, per dozen	----	----	19.00	22.00	28.00	42.00	68.00	96.00	190.00
No. 15. Lever Handle, Hose Bibbs, Iron Pipe, Nickel Plated, per dozen	----	----	21.50	24.50	30.50	45.00	----	----	----
No. 15. Lever Handle, Hose Bibbs, Iron Pipe, Rough, per dozen	----	----	18.00	20.00	25.00	38.00	60.00	84.00	170.00

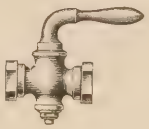
Flat-way Lever Handle Stop and Stop and Waste Cocks.



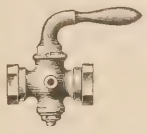
No. 16.
LEVER HANDLE STOP.
Lead Pipe.



No. 17.
LEVER HANDLE STOP
AND WASTE.
Lead Pipe.



No. 18.
LEVER HANDLE STOP.
Iron Pipe.

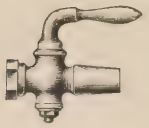


No. 19.
LEVER HANDLE STOP
AND WASTE.
Iron Pipe.

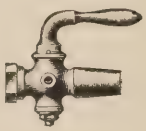
Lever Handle Stop and Stop and Waste Cocks.

Size	⅜	½	⅝	¾	1	1¼	1½	2
No. 16. Lever Handle Stop, Lead Pipe, Rough, per dozen	12.00	14.00	16.50	20.50	30.00	48.50	67.50	115.00
No. 16. Lever Handle Stop, Lead Pipe, Finished, per dozen	15.50	17.50	20.00	26.50	39.00	64.50	89.50	180.00
No. 17. Lever Handle Stop and Waste, Lead Pipe, Rough, per dozen	14.00	16.00	18.50	22.50	33.00	52.50	73.50	125.00
No. 17. Lever Handle Stop and Waste, Lead Pipe, Finished, per dozen	18.00	20.00	22.50	29.00	43.00	----	----	----
No. 18. Lever Handle Stop, Iron Pipe, Rough, per dozen	14.00	16.00	19.50	23.50	34.00	53.50	74.50	125.00
No. 18. Lever Handle Stop, Iron Pipe, Finished, per dozen	17.50	19.50	23.00	29.50	43.00	----	----	----
No. 19. Lever Handle Stop and Waste, Iron Pipe, Rough, per dozen	16.00	18.00	21.50	25.50	37.00	57.50	80.50	135.00
No. 19. Lever Handle Stop and Waste, Iron Pipe, Finished, per dozen	19.50	21.50	25.00	31.50	46.00	----	----	----

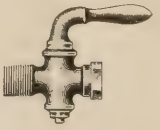
Flat-way Rough and Finished Lever Handle, Ground Key Stop and Stop and Waste Cocks.



No. 20.
LEVER HANDLE STOP.
Lead and Iron Pipe.



No. 21.
LEVER HANDLE STOP AND WASTE.
Lead and Iron Pipe.



No. 22.
LEVER HANDLE STOP.
Male and Female.
Iron Pipe.



No. 23.
LEVER HANDLE STOP AND WASTE.
Male and Female. Iron Pipe.

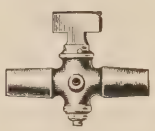
Lever Handle Stop and Stop and Waste Cocks.

Size	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
No. 20. Lever Handle Stop, Lead and Iron Pipe, Rough, per dozen	13.00	15.00	18.00	22.00	32.00	51.00	71.00	120.00
No. 20. Lever Handle Stop, Lead and Iron Pipe, Finished, per dozen	16.50	18.50	21.50	28.00	41.00	----	----	---
No. 21. Lever Handle Stop and Waste, Lead and Iron Pipe, Rough, per dozen	15.00	17.00	20.00	24.00	35.00	55.00	77.00	130.00
No. 21. Lever Handle Stop and Waste, Lead and Iron Pipe, Finished, per dozen	19.00	21.00	24.00	30.50	45.00	----	----	---
No. 22. Lever Handle Stop, Male and Female, Iron Pipe, Rough, per dozen	14.00	16.00	19.50	23.50	34.00	53.50	74.50	125.00
No. 22. Lever Handle Stop, Male and Female, Iron Pipe, Finished, per dozen	17.50	19.50	23.00	29.50	43.00	----	----	----
No. 23. Lever Handle Stop and Waste, Male and Female, Iron Pipe, Rough, per dozen	16.00	18.00	21.50	25.50	37.00	57.50	80.50	135.00
No. 23. Lever Handle Stop and Waste, Male and Female, Iron Pipe, Finished, per dozen	19.50	21.50	25.00	31.50	46.00	----	----	----

Flat-way Rough and Finished T Handle Ground Key Stop and Stop and Waste Cocks.



No. 24.
T HANDLE STOP.
Lead Pipe.



No. 25.
T HANDLE STOP AND WASTE.
Lead Pipe.



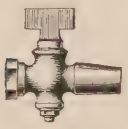
No. 26.
T HANDLE STOP.
Iron Pipe.



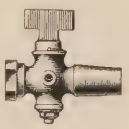
No. 27.
T HANDLE STOP AND WASTE.
Iron Pipe.

T Handle Stop and Stop and Waste Cocks.

Size	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
No. 24. T Handle Stop, Lead Pipe, Rough, per doz.	11.00	13.00	15.00	19.00	28.00	46.00	64.00	110.00
No. 25. T Handle Stop and Waste, Lead Pipe, Rough, per dozen	13.00	15.00	17.00	21.00	31.00	50.00	70.00	120.00
No. 26. T Handle Stop, Iron Pipe, Rough, per doz.	13.00	15.00	18.00	22.00	32.00	51.00	71.00	120.00
No. 27. T Handle Stop, and Waste Iron Pipe, Rough, per dozen	15.00	17.00	20.00	24.00	35.00	55.00	77.00	130.00



No. 28.
T HANDLE STOP.
Lead and Iron Pipe.



No. 29.
T HANDLE STOP AND WASTE.
Lead and Iron Pipe.



No. 30.
T HANDLE STOP.
Male and Female.
Iron Pipe.

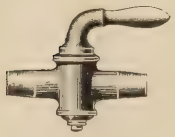


No. 31.
T HANDLE STOP AND WASTE.
Male and Female.
Iron Pipe.

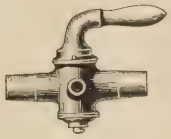
T Handle Stop and Stop and Waste Cocks.

Size	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
No. 28. T Handle Stop, Lead and Iron Pipe, Rough, per dozen	12.00	14.00	16.50	20.50	30.00	48.50	67.50	115.00
No. 29. T Handle Stop and Waste, Lead and Iron Pipe, Rough, per dozen	14.00	16.00	18.50	22.50	33.00	52.50	73.50	125.00
No. 30. T Handle Stop, Male and Female, Iron Pipe, Rough, per dozen	13.00	15.00	18.00	22.00	32.00	51.00	71.00	120.00
No. 31. T Handle Stop and Waste, Male and Female, Iron Pipe, Rough, per dozen	15.00	17.00	20.00	24.00	35.00	55.00	77.00	130.00

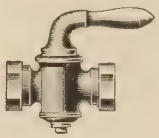
Round-way Rough and Finished Lever Handle Ground Key Stop and Stop and Waste Cocks.



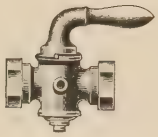
No. 32.
LEVER HANDLE ROUND-WAY STOP.
Lead Pipe.



No. 33.
LEVER HANDLE ROUND-WAY STOP AND WASTE.
Lead Pipe.



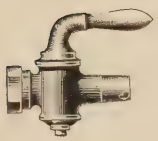
No. 34.
LEVER HANDLE ROUND-WAY STOP.
Iron Pipe.



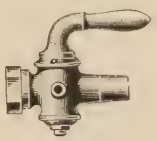
No. 35.
LEVER HANDLE ROUND-WAY STOP AND WASTE.
Iron Pipe.

Round-way Lever Handle Stop and Stop and Waste Cocks.

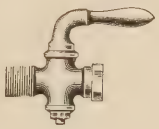
Size	½	⅝	¾	1	1¼	1½	2
No. 32. Lever Handle Round-way Stop, Lead Pipe, Rough, per dozen	18.00	21.50	26.50	46.00	72.50	103.50	185.00
No. 33. Lever Handle Round-way Stop and Waste, Lead Pipe, Rough, per dozen	20.00	23.50	28.50	49.00	76.50	109.50	195.00
No. 34. Lever Handle Round-way Stop, Iron Pipe, Rough, per dozen	20.00	24.50	29.50	50.00	77.50	110.50	195.00
No. 35. Lever Handle Round-way Stop and Waste, Iron Pipe, Rough, per dozen	22.00	26.50	31.50	53.00	81.50	116.50	205.00



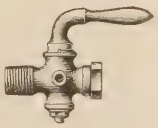
No. 36.
LEVER HANDLE ROUND-WAY STOP.
Lead and Iron Pipe.



No. 37.
LEVER HANDLE ROUND-WAY STOP AND WASTE.
Lead and Iron Pipe.



No. 38.
LEVER HANDLE ROUND-WAY STOP.
Male and Female.
Iron Pipe.

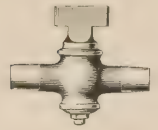


No. 39.
LEVER HANDLE ROUND-WAY STOP AND WASTE.
Male and Female.
Iron Pipe.

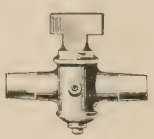
Round-way Lever Handle Stop and Stop and Waste Cocks.

Size	½	⅝	¾	1	1¼	1½	2
No. 36. Lever Handle Round-way Stop, Lead and Iron Pipe, Rough, per dozen	19.00	23.00	28.00	48.00	75.00	107.00	190.00
No. 37. Lever Handle Round-way Stop and Waste, Lead and Iron Pipe, Rough, per dozen	21.00	25.00	30.00	51.00	79.00	113.00	200.00
No. 38. Lever Handle Round-way Stop, Male and Female, Iron Pipe, Rough, per dozen	20.00	24.50	29.50	50.00	77.50	110.50	195.00
No. 39. Lever Handle Round-way Stop and Waste, Male and Female, Iron Pipe, Rough, per dozen	22.00	26.50	31.50	53.00	81.50	116.50	205.00

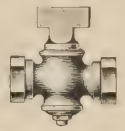
Round-way Rough and Finished T Handle Ground Key Stop and Stop and Waste Cocks.



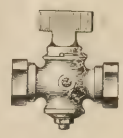
No. 40.
T HANDLE
ROUND-WAY STOP.
Lead Pipe.



No. 41.
T HANDLE
ROUND-WAY STOP AND WASTE.
Lead Pipe.



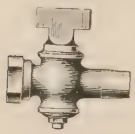
No. 42.
T HANDLE
ROUND-WAY STOP.
Iron Pipe.



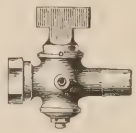
No. 43.
T HANDLE
ROUND-WAY STOP AND WASTE
Iron Pipe.

T Handle Round-way Stop and Stop and Waste.

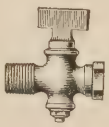
Size	½	⅝	¾	1	1¼	1½	2
No. 40. T Handle Round-way Stop, Lead Pipe, Rough, per dozen	17.00	20.00	25.00	44.00	70.00	100.00	180.00
No. 41. T Handle Round-way Stop and Waste, Lead Pipe, Rough, per dozen	19.00	22.00	27.00	47.00	74.00	106.00	190.00
No. 42. T Handle Round-way Stop, Iron Pipe, Rough, per dozen	19.00	23.00	28.00	48.00	75.00	107.00	190.00
No. 43. T Handle Round-way Stop and Waste, Iron Pipe, Rough, per dozen	21.00	25.00	30.00	51.00	79.00	113.00	200.00



No. 44.
T HANDLE
ROUND-WAY STOP.
Lead and Iron Pipe.



No. 45.
T HANDLE
ROUND-WAY STOP AND WASTE.
Lead and Iron Pipe.



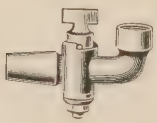
No. 46.
T HANDLE
ROUND-WAY STOP.
Male and Female.
Iron Pipe.



No. 47.
T HANDLE
ROUND-WAY STOP AND WASTE.
Male and Female.

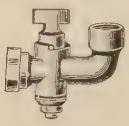
T Handle Round-way Stop and Stop and Waste Cocks.

Size	½	⅝	¾	1	1¼	1½	2
No. 44. T Handle Round-way Stop, Lead and Iron Pipe, Rough, per dozen	18.00	21.50	26.50	46.00	72.50	103.50	185.00
No. 45. T Handle Round-way Stop and Waste, Lead and Iron Pipe, Rough, per dozen	20.00	23.50	28.50	49.00	76.50	109.50	195.00
No. 46. T Handle Round-way Stop, Male and Female, Iron Pipe, Rough, per dozen	19.00	23.00	28.00	48.00	75.00	107.00	190.00
No. 47. T Handle Round-way Stop and Waste, Male and Female, Iron Pipe, Rough, per dozen	21.00	25.00	30.00	51.00	79.00	113.00	200.00



No. 48.
HYDRANT COCK STRAIGHT-WAY.
Lead and Iron Pipe.

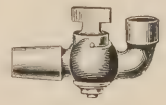
Hydrant Cocks.



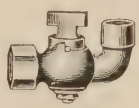
No. 49.
HYDRANT COCK STRAIGHT-WAY.
Iron Pipe.

Straight-way Hydrant Cocks.

Size	½	⅝	¾	1	1¼
No. 48. Hydrant Cocks Straight-way, Lead and Iron Pipe, Rough, per doz.	20.00	23.50	28.00	39.50	61.50
No. 49. Hydrant Cocks Straight-way, Iron Pipe, Rough, per dozen	21.00	25.00	29.50	41.50	64.00
No. 49½. " " " both ends, Lead Pipe, Rough, per doz.	19.00	22.00	26.50	37.50	59.00



No. 50.
HYDRANT COCK ROUND-WAY.
Lead and Iron Pipe.

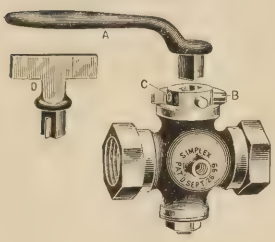


No. 51.
HYDRANT COCK ROUND-WAY.
Iron Pipe.

Round-way Hydrant Cocks.

Size	½	⅝	¾	1	1¼
No. 50. Hydrant Cocks, Round-way, Lead and Iron Pipe, Rough, per doz.	24.00	28.50	34.00	55.50	85.50
No. 51. Hydrant Cocks Round-way, Iron Pipe, Rough, per dozen	25.00	30.00	35.50	57.50	88.00
No. 51½. " " " both ends, Lead Pipe, Rough, per doz.	23.00	27.00	32.50	53.50	83.00

Simplex Stop and Waste Cocks for Lead and Iron Pipe



Are interchangeable from right to left and for Lever or Tee Handle or Hydrant Rod. They are made of Steam Metal with Malleable Iron Handles. Every Cock tested and warranted in material and workmanship.

To change from Right to Left or vice versa:

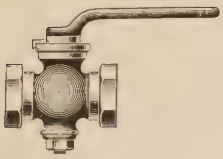
Take out Set Screw B.

Reverse Handle.

Put Set Screw in opposite Hole C.

Rough and Finish Stops and Stop Wastes are furnished with Lever Handles unless otherwise ordered.

Can be operated with rod if desired.



LEVER STOP.
For Iron Pipe, Flat-way.

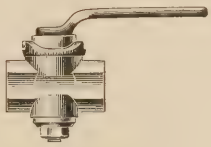
Size	½	⅝	¾	1
Rough, per dozen	16.00	19.50	23.50	34.00
Finished, "	19.50	23.00	29.50	43.00
Nickel Plated, "	22.00	25.50	32.00	46.00

Lever Handle Stop for Lead Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	14.00	16.50	20.50	30.00
Finished, "	17.50	20.00	26.50	39.00
Nickel Plated, "	20.00	22.50	29.00	42.00

Lever Handle Stop for Lead and Iron Pipe, Flat-way.

Size	½	⅝	⅜	1
Rough, per dozen	15.00	18.00	22.00	32.00
Finished, "	18.50	21.50	28.00	41.00
Nickel Plated, "	21.00	24.00	30.50	44.00



LEVER STOP.
For Iron Pipe, Round-way.

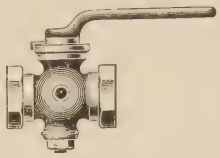
Size	½	⅝	¾	1
Rough, per dozen	20.00	24.50	29.50	50.00

Lever Handle Stop for Lead Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	18.00	21.50	26.50	46.00

Lever Handle Stop for Lead and Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	19.00	23.00	28.00	48.00



LEVER STOP AND WASTE.
For Iron Pipe, Flat-way.

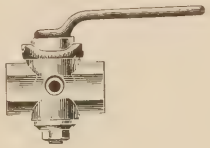
Size	½	⅝	¾	1
Rough, per dozen	18.00	21.50	25.50	37.00
Finished, "	21.50	25.00	31.50	46.00
Nickel Plated, "	24.00	27.50	34.00	49.00

Lever Handle Stop and Waste for Lead Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	16.00	18.50	22.50	33.00
Finished, "	20.00	22.50	29.00	43.00
Nickel Plated, "	22.50	25.00	31.50	46.00

Lever Handle Stop and Waste for Lead and Iron Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	17.00	20.00	24.00	35.00
Finished, "	21.00	24.00	30.50	45.00
Nickel Plated, "	23.50	26.50	33.00	48.00



LEVER STOP AND WASTE.
For Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	22.00	26.50	31.50	53.00

Lever Handle Stop and Waste for Lead Pipe, Round-way.

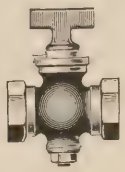
Size	½	⅝	¾	1
Rough, per dozen	20.00	23.50	28.50	49.00

Lever Handle Stop and Waste, for Lead and Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	21.00	25.00	30.00	51.00

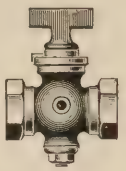
Stops for Lead and Iron Pipe furnished with outside thread on iron pipe end if so ordered.

Simplex Stop and Waste Cocks for Lead and Iron Pipe.



TEE HANDLE STOP,
For Iron Pipe. Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	16.00	19.50	23.50	34.00
Finished, "	19.50	23.00	29.50	43.00
Nickel Plated, "	22.00	25.50	32.00	46.00



TEE HANDLE STOP AND WASTE,
For Iron Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	18.00	21.50	25.50	37.00
Finished, "	21.50	25.00	31.50	46.00
Nickel Plated, "	24.00	27.50	34.00	49.00

Tee Handle Stop for Lead Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	14.00	16.50	20.50	30.00
Finished, "	17.50	20.00	26.50	39.00
Nickel Plated, "	20.00	22.50	29.00	42.00

Tee Handle Stop and Waste for Lead Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	16.00	18.50	22.50	33.00
Finished, "	20.00	22.50	29.00	43.00
Nickel Plated, "	22.50	25.00	31.50	46.00

Tee Handle Stop for Lead and Iron Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	15.00	18.00	22.00	32.00
Finished, "	18.50	21.50	28.00	41.00
Nickel Plated, "	21.00	24.00	30.50	44.00

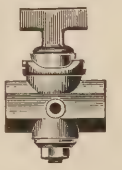
Tee Handle Stop and Waste for Lead and Iron Pipe, Flat-way.

Size	½	⅝	¾	1
Rough, per dozen	17.00	20.00	24.00	35.00
Finished, "	21.00	24.00	30.50	45.00
Nickel Plated, "	23.50	26.50	33.00	48.00



TEE HANDLE STOP,
For Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	20.00	24.50	29.50	50.00



TEE HANDLE STOP AND WASTE,
For Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	22.00	26.50	31.50	53.00

Tee Handle Stop for Lead Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	18.00	21.50	26.50	46.00

Tee Handle Stop and Waste for Lead Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	20.00	23.50	28.50	49.00

Tee Handle Stop for Lead and Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	19.00	23.00	28.00	48.00

Tee Handle Stop and Waste for Lead and Iron Pipe, Round-way.

Size	½	⅝	¾	1
Rough, per dozen	21.00	25.00	30.00	51.00

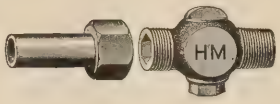
Stops for Lead and Iron Pipe furnished with outside Thread on Iron Pipe end if so ordered.

Mueller Corporation Stop Cocks.

Threaded on Long End for Mueller Tapping Machine Tools.



NO. 1.—BENT COUPLING, FITTED FOR HEXAGON PLUG.



NO. 2.—STRAIGHT COUPLING, FITTED FOR HEXAGON PLUG.



NO. 3.—SHORT END THREADED FOR IRON PIPE. FITTED FOR HEXAGON PLUG.

Size	⅜	½	⅝	¾	1	1¼	1½	2
No. 1. Each	1.20	1.35	1.70	2.50	3.85	8.65	11.30	17.50
" 2. "	1.20	1.35	1.70	2.50	3.85	8.65	11.30	17.50
" 3. "	----	1.10	1.40	2.10	3.35	7.50	9.50	15.00



NO. 4.—BENT COUPLING, FITTED FOR SCREW PLUG.



NO. 5.—STRAIGHT COUPLING, FITTED FOR SCREW PLUG.



NO. 6.—SHORT END THREADED FOR IRON PIPE. FITTED FOR SCREW PLUG.

Size	⅜	½	⅝	¾	1	1¼	1½	2
No. 4. Each	1.20	1.35	1.70	2.50	3.85	8.65	11.30	17.50
" 5. "	1.20	1.35	1.70	2.50	3.85	8.65	11.30	17.50
" 6. "	----	1.10	1.40	2.10	3.35	7.50	9.50	15.00

Round-Way, Fitted with Standard Iron Pipe Thread.



NO. 7.—BENT COUPLING, IRON PIPE THREAD ON LONG END.



NO. 8.—STRAIGHT COUPLING, IRON PIPE THREAD ON LONG END.



NO. 9.—THREADED FOR IRON PIPE BOTH ENDS.

Size	⅜	½	⅝	¾	1	1¼	1½	2
No. 7. Each	1.30	1.55	1.90	2.80	4.40	8.65	11.30	17.50
" 8. "	1.30	1.55	1.90	2.80	4.40	8.65	11.30	17.50
" 9. "	1.05	1.30	1.65	2.40	3.80	7.50	9.50	15.00

Round-Way, Coarse Thread on Long End for Wood Pipe.



NO. 10.—BENT COUPLING, COARSE THREAD ON LONG END.



NO. 11.—STRAIGHT COUPLING, COARSE THREAD ON LONG END.



NO. 12.—IRON PIPE THREAD SHORT END. COARSE THREAD ON LONG END.

Size	½	⅝	¾	1
No. 10. Each	1.65	2.00	3.00	4.70
" 11. "	1.65	2.00	3.00	4.70
" 12. "	1.50	1.90	2.70	4.10

Corporation Stop Cocks for Payne Machines.



NO. 13.—BENT COUPLING, FITTED FOR SCREW PLUG.



NO. 14.—FITTED FOR SCREW PLUG. IRON PIPE THREAD SHORT END.



NO. 15.—CORPORATION STOP COCK TO DRIVE IN MAIN. QUARTER BEND, COUPLING AND NUT.

Size	⅜	½	⅝	¾	1	1¼	1½	2
No. 13. Per dozen	16.00	19.00	23.00	34.00	53.00	104.00	136.00	210.00
" 14. "	13.00	16.00	20.00	29.00	46.00	90.00	----	----
" 15. Each	----	1.50	1.90	2.80	4.35	----	----	----

Brass Water Connections.





No. 1, Two Branch.
1¼-inch Outlet for Iron Pipe 1.50

No. 2, Three Branch.
1½-inch Outlet for Iron Pipe 2.00

No. 3, Four Branch.
2-inch Outlet for Iron Pipe 3.00

No. 7, Six Branch.
2½-inch Outlet for Iron Pipe 6.00

No. 8, Eight Branch.
3-inch Outlet for Iron Pipe 9.00

No. 4, Two Branch.
1¼-inch Outlet for Iron Pipe 3.00

No. 5, Three Branch.
1½-inch Outlet for Iron Pipe 4.50

No. 6, Four Branch.
2-inch Outlet for Iron Pipe 6.00

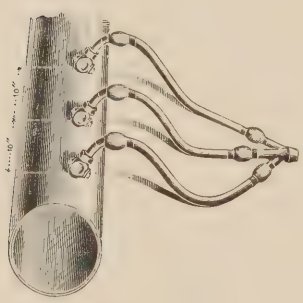
No. 9, Six Branch.
2½-inch Outlet for Iron Pipe 8.00

No. 10, Eight Branch.
3-inch Outlet for Iron Pipe 12 00

Nos. 1, 2, 3, 7 and 8 have plain ends on inlets for 1-inch lead pipe. Nos. 4, 5, 6, 9 and 10 have soldering unions on inlets for 1-inch lead pipe. Nos. 1, 2 and 3 can be furnished with iron pipe thread on inlets, if desired, at a slightly increased cost.

In many cities where high pressure systems are used the ordinances require that no larger tap than 1 inch shall be made in the mains, as it is claimed the pipes are weakened too much. To overcome this we have placed these connections on the market. Any size service can be made from 1¼ inch to 3 inch inclusive without any danger of weakening the mains. The branches or inlets are made with 1 inch openings. They are so constructed that the flow of water through the different branches do not obstruct each other. The area of the branches or inlets is equal to the area of the outlet.

Branch Goose Necks.



THREE BRANCH GOOSE NECK.

These connections are intended for use where a 1¼ to 3 inch service pipe is required by cities or water companies who do not allow a larger tap than 1 inch to be made in the main.

It will be seen that the flow of water through one branch is not obstructed by that of another. The connections should be set about 20 to 36 inches from the main, according to number of branches, and the distance between taps in main should be about 10 inches.

Wherever used they give excellent satisfaction and are a great improvement over the old method of making large connections, and are comparatively cheaper.

Before these Goose Necks are packed for shipment they are carefully tested and guaranteed to stand 200 lbs. water pressure. Extra strong lead pipe is used and the joints are wiped by practical workmen.

Two Branch Goose Neck, complete, with Corporation Cocks 8.00
Outlet 1¼ inch for iron or lead pipe. Iron pipe sent unless ordered otherwise.

Three Branch Goose Neck, complete, with Corporation Cocks 11.00
Outlet 1½ inch for iron or lead pipe. Iron pipe sent unless ordered otherwise.

Four Branch Goose Neck, complete, with Corporation Cocks 15.00
Outlet 2 inch for iron or lead pipe. Iron pipe sent unless ordered otherwise.

Six Branch Goose Neck, complete, with Corporation Cocks 24.00
Outlet 2½ inch for iron pipe.

Eight Branch Goose Neck, complete, with Corporation Cocks 37.00
Outlet 3 inch for iron pipe.

Lead Goose Necks, Single Branch.

Size	⅜	½	⅝	¾	1
Price, complete, each	1.40	1.50	1.70	2.00	2.70

These Lead Goose Necks are furnished complete, ready to attach to the water main. Consist of 18 inches of extra strong lead pipe, with corporation stop cock (either screw or hexagon) wiped on one end, and male brass soldering nipple on the other. Wiped with female soldering nipple if desired at the same price. Special lengths furnished at an increased cost. When ordering state whether screw or hexagon plug corporation cocks are wanted, as we invariably send screw plugs in the absence of other information.

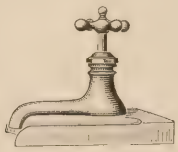
Basin and Urinal Cocks.



No. 1.
BASIN COCK.
Tee Handle.



No. 2.
BASIN COCK.
Cross Handle.



No. 6.
BASIN COCK.
Cross Handle.



ENGLISH PATTERN.
With China Index.

Compression Basin Cocks—Tee and Cross Handle.

No. 0.	Compression Basin Cocks, Nickel Plated, not illustrated, per dozen	18.00
" 0.	Add for Stuffing Box, per dozen	2.00
" 0.	" Cross Handles, "	1.00
" 1.	Compression Basin Cocks, Nickel Plated, per dozen	19.00
" 1.	Add for Stuffiing Box, per dozen	2.00
" 1.	" Cross Handles, "	1.00
" 2.	Compression Basin Cocks, Nickel Plated, per dozen	22.00
" 2.	Add for Stuffing Box, per dozen	2.00
" 2.	For Tee Handles, deduct, per dozen	2.00
" 6.	Compression Basin Cocks, Nickel Plated, Cross Handle, per dozen	21.00
" 6.	" " " " " " Tee " "	19.00
English Pattern Basin Cock, with China Index, Nickel Plated,	"	38.00

Doherty, Telegraph Handle and Boston Self-Closing Basin and Pantry Cocks.



DOHERTY S. C.
BASIN COCK.



TELEGRAPH HANDLE S. C.
BASIN COCK.



BOSTON S. C.
BASIN COCK.



BOSTON S C.
PANTRY COCK.

Self-Closing Basin and Pantry Cocks.

Doherty Self-Closing Basin Cock, Nickel Plated, per dozen		48.00
No. 0.	Telegraph Handle Self-Closing Basin Cock, Nickel Plated, per dozen	27.00
" 1.	" " " " " " " " "	34.00
Boston Self-Closing Basin Cock, Nickel Plated, per dozen		48.00
" "	Pantry " " " "	64.00

Urinal Cocks.

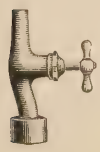


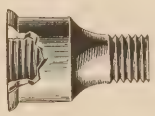
Fig. 59.
COMPRESSION
URINAL COCK.
Lead Pipe.



Fig. 60.
COMPRESSION
URINAL COCK.
Iron Pipe.



Fig. 61.
COMPRESSION
URINAL COCK.
Flange and Thimble,
Lead Pipe.



THIMBLE FOR IRON
PIPE CONNECTION.



FLANGE NUT AND BENT
COUPLING.

Compression Urinal Cocks, Lead Pipe, Iron Pipe and Flange and Thimble.

| Size | | |

Fuller and Swing Basin Cocks.



No. 0.



No. 1.



No. 2.



No. 4½.

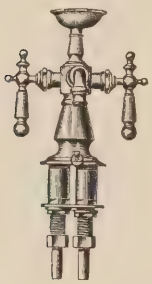


No. 5.

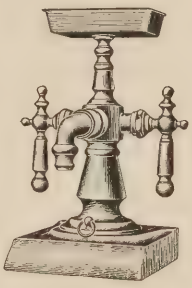
Fuller Single Basin Cocks.

No. 0.	Fuller Basin Cock, Nickel Plated, per dozen	40.00
No. 1.	" " " " " " "	40.00
No. 2.	" " " " " " "	44.00
No. 4½.	" " " " " " "	76.00
No. 5.	" " " " " " "	58.00
No. 5.	" " " " " " " with Ebony or China Handle	70.00

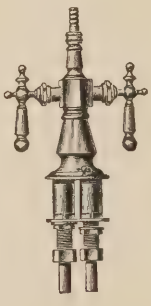
Fuller Double Basin Cocks.



No. 8.
FULLER DOUBLE BASIN COCK.



No. 10.
FULLER DOUBLE BASIN COCK.



No. 8.
FULLER DOUBLE SHAMPOO COCK.

Fuller Double Basin and Shampoo Cocks.

No. 8.	Fuller Double Basin Cock, Nickel Plated, each	13.00
No. 10.	" " " " " " " "	15.00
No. 8.	" " Shampoo Cock, Nickel Plated, each	14.00
	If with Ebony or Ivory Handles, add each	2.00

Fuller Bracket and Ground Key Swing Basin Cocks.



FULLER BRACKET BASIN COCK.



GROUND KEY SWING BASIN COCK.



GROUND KEY SWING BASIN COCK, WITH SHAMPOO SPRINKLER.

Fuller Bracket Basin Cock, Flange and Thimble, Lead Pipe, Nickel Plated, per dozen		36.00
" " " " " " "	Iron " " " " "	40.00
" " " " "	Nut and Bent Coupling " " " "	48.00
Swing Basin Cock, Nickel Plated, per dozen		24.00
" " "	with Shampoo Sprinkler, Nickel Plated, per dozen	28.00
" " "	without " " " " " "	22.00

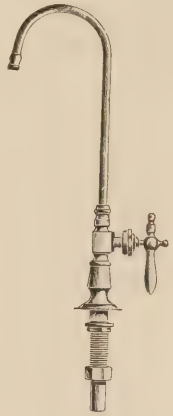
Compression and Fuller Pantry Cocks.



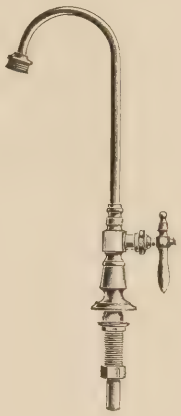
COMPRESSION PANTRY COCK.
Plain End, No. 2.



COMPRESSION PANTRY COCK.
Hose End, No. 2.



FULLER PANTRY COCK.
Plain End, No. 2.



FULLER PANTRY COCK.
Hose End, No. 2.

Compression and Fuller Pantry Cocks, Plain and Hose End.

No. 1	Compression	Pantry	Cocks,	Plain	End,	Nickle	Plated,	per dozen	34.00
No. 1	"	"	"	Hose	"	"	"	"	37.00
No. 2	"	"	"	Plain	"	"	"	"	38.00
No. 2	"	"	"	Hose	"	"	"	"	41.00
No. 1	Fuller	"	"	Plain	"	"	"	"	42.00
No. 1	"	"	"	Hose	"	"	"	"	45.00
No. 2	"	"	"	Plain	"	"	"	"	50.00
No. 2	"	"	"	"	"	"	"	"	53.00



COMPRESSION DOUBLE PANTRY COCK.

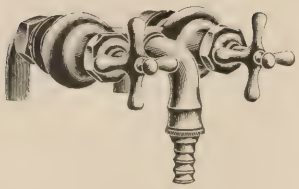


FULLER DOUBLE PANTRY COCK.

Compression and Fuller Double Pantry Cocks.

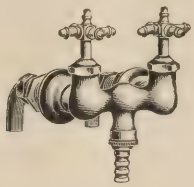
Compression	Double	Pantry	Cock,	Nickle	Plated,	each		12.00
Fuller	"	"	"	"	"	"		18.00
"	"	"	"	with	Ebony	or	Ivory	Handles add, each 2.00

Bath Cocks and Bath Bibbs.



No. 1.

No. 1. Double Compression Bath Cock, Center to Center 3⅜ inches. Nickel Plated, each 2.50



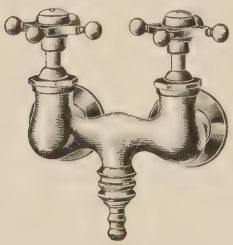
No. 3.

No. 3. Double Compression Bath Cock, Nickel Plated, Center to Center 3⅜ inches. Nickel Plated, each 3.00



No. 11.

No. 11. Double Compression Bath Cock, Center to Center 3⅜ inches. Nickel Plated, each 3.00



No. 3.

WITH CHINA INDEX.

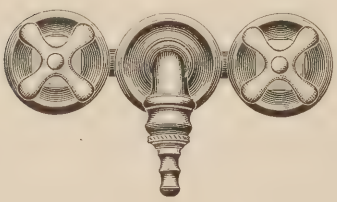
No. 3. Double Compression Bath Cock, Nickel Plated, with China Index marked Hot and Cold, Center to Center 3⅜ inches, each 5.00



No. 4.

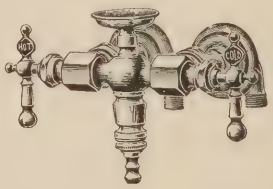
WITH JEWEL CUP.

No. 4. Double Compression Bath Cock with Jewel Cup, Center to Center 4½ inches, ½ inch couplings. Nickel Plated, each 7.50



No. 5.

No. 5. Double Compression Bath Cock, Center to Center 5½ inches, ½-inch couplings, Nickel Plated, each 6.00



No. 4½.

No. 4½. Fuller Improved Double Bath Cock, Nickel Plated.

Center to Center	3⅜	4½	5	5½	6
Nickel Plated, each	5.00	7.00	7.50	8.00	8.50

Bath Bibbs.



COMPRESSION BATH BIBB.
Flange and Thimble Lead Pipe.

Size	½	⅝
Finished, per dozen	22.00	26.00
Nickel Plated, per doz.	25.50	29.50



COMPRESSION BATH BIBBS.
Flange, Nut and Bent Coupling.

Size	½	⅝
Finished, per dozen	29.00	37.00
Nickel Plated, per doz.	32.50	40.50



FULLER BATH BIBB.
Flange, Nut and Bent Coupling.

Size	½	⅝
Finished, per dozen	38.00	43.00
Nickel Plated, per doz.	44.00	49.00

Nickel Plated Brass Lavatory Legs.



Style A.
Per Pair,
2.00



Style G.
Per Pair,
2.15



Style B.
Per Pair,
2.80



Style H.
Per Pair,
2.95



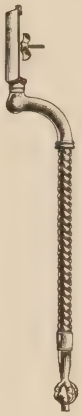
Style D.
Per Pair,
3.60



Style K.
Per Pair,
3.75



Style E.
Per Pair,
5.25



Style L.
Per Pair,
5.40

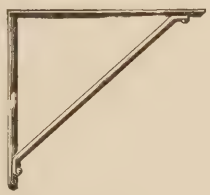


APRON HOLDER.
Per Pair,
.70

Lavatory Brackets.



Style M, 16 x 18.
NICKEL PLATED.
Per Pair..... 2.50

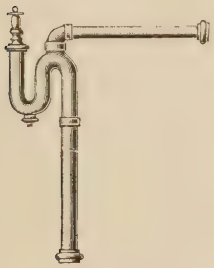


Style N, 16 x 18.
SOLID BRASS, NICKEL PLATED.
Per Pair..... 6.00



Style O, 16 x 18.
ALL STEEL, NICKEL PLATED.
Per Pair..... 1.50

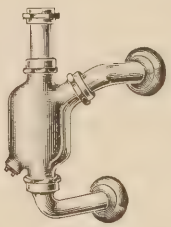
Nickel Plated Brass Lavatory Traps.



FULL S TRAP.
Vent to Wall and Waste to Floor (Light).



BOTTLE TRAP.
Flat Pattern, with Vent to Wall and Waste to Floor.



BOTTLE TRAP.
Flat Pattern, with Vent and Waste to Wall.

Full S Trap.

1½-inch N. P. Brass Full S Trap,	Vent to Wall and waste to floor (Light), each	3.75
1½ " " " " " "	no Vent, with " " " "	3.50
2 " " " " " "	Vent to wall and " " " "	9.00

½ S Traps, same price as Full S listed above.

Bottle Trap.

N. P. Brass, Flat Pattern, with Vent to wall and Waste to floor, and with Vent and Waste to Wall 5.00
If without Vent, deduct ..... .50

The Nason Combination Basin Fixtures.



"DANDY" COMBINATION BASIN FIXTURE.

Nickel Plated, each.... 8.00

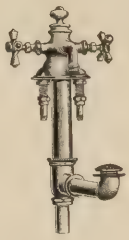


Plate 305.

"ELITE" COMBINATION BASIN FIXTURE.

Nickel Plated, each.... 16.00

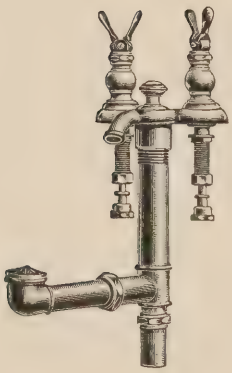


Plate N 303.

DOHERTY SELF-CLOSING BASIN FIXTURE.

Nickel Plated with China Top Waste, each.... 17.00

Nickel Plated with engraved Pearl Top Waste, each.... 19.00

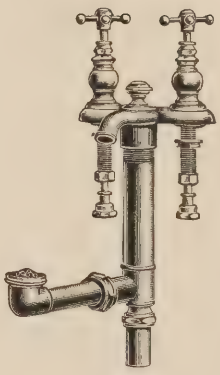


Plate N 301.

COMPRESSION COMBINATION BASIN FIXTURE.

Nickel Plated with China Tops, each.... 16.00

Nickel Plated with engraved Pearl Tops, each.. 18.00

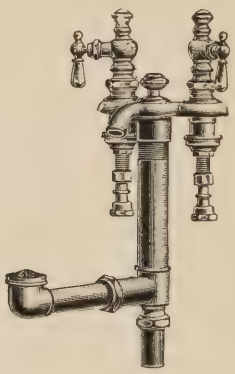


Plate N 300.

FULLER COMBINATION BASIN FIXTURE.

Nickel plated with China Tops each.... 16.00

Nickel Plated with engraved Pearl Tops.... 18.00

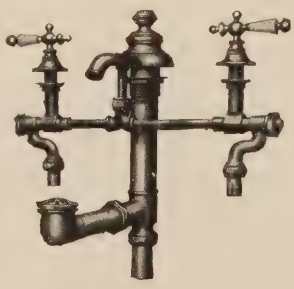


Plate N 304.

FULLER COMBINATION BASIN FIXTURE.

Nickel Plated, each.... 16.00

With China, Ebony or Ivory handle, each.... 17.50

Basin Traps, Vent Tees and Supply Pipes.

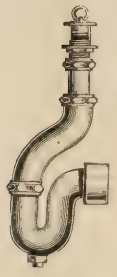


Fig. 1.
1¼-inch Nickel Plated Brass.
N.Y. Regulation Adjustable Trap.
Price 3.00

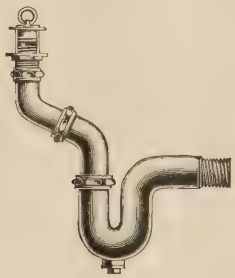


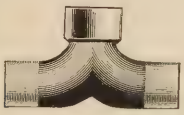
Fig. 2.
1¼-inch Nickel Plated Brass.
N.Y. Regulation Adjustable Trap.
Price 3.60



Fig. 3.
1½-inch Nickel Plated Brass.
N. Y. Regulation Full S Trap.
Vent to Wall and Waste to Floor.

Price	7.00
Same without Pipes	4.50
2-inch with Pipes	10.50
Same without Pipes	6.50

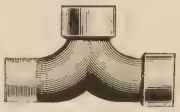
Brass Vent Tees, New York Regulation.



Style A.

IRON PIPE SIZE, TWO LEAD PIPE ENDS.

Size	1½	2
Lead Pipe	.80	1.10



Style B.

IRON PIPE SIZE, ONE LEAD PIPE END.

Size	1½	2
Iron Pipe, one end	.95	1.50

Nickel Plated Brass Lavatory Supply Pipes, ⅜-inch Iron Pipe Size.



No. 122.
Per pair 2.50



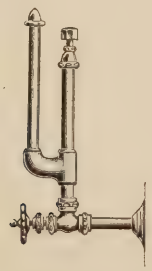
No. 123.
Per pair 4.00



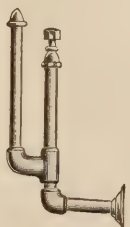
No. 124.
Per pair 6.00



No. 125.
Per pair 5.00



No. 126.
Per pair 6.00

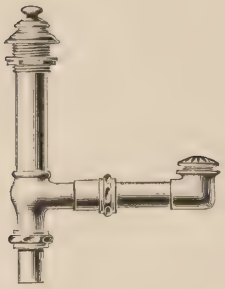


No. 127.
Per pair 5.00



No. 128.
Per pair 3.00

Waste Connections, Chain Stays, Etc.



N. P. STANDING WASTE AND OVERFLOW FOR BASIN.

Each 5.00



N. P. STANDING WASTE AND OVERFLOW FOR BATH.

Each 10.00

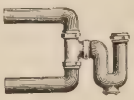


Plate 173.

THREE PART WASH TRAY WASTE.

				Rough.	Nickel Plated.
1½ inch	for	3	Part Wash Tray	6.25	8.15
2 "		3	" "	9.75	10.75
1½ "		2	" "	4.65	6.05
2 "		2	" "	6.50	8.50
1½ "		4	" "	8.50	11.05
2 "		4	" "	13.00	17.00





ROUGH BRASS TRAPS FOR COMBINATION WASH TRAY WASTE.

Without Vent.	1½ inch S Trap.	2 inch S Trap.
Each	3.00	5.50
Without Vent.	1½ inch ½ S Trap.	2 inch ½ S Trap.
Each	2.25	4.50
With Vent.	1½ inch S Trap.	2 inch S Trap.
Each	4.00	6.50
With Vent.	1½ inch ½ S Trap.	2 inch ½ S Trap.
Each	4.00	6.50



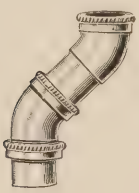
N. P. CONNECTED WASTE AND OVERFLOW.

Each 3.00



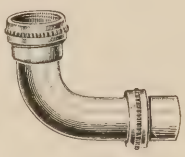
CLOSET REPAIR COUPLING.
Showing coupling as applied on broken horn.

Size, ins.	1¼	1½	2
Each	1.50	1.75	2.00



N. P. OFFSET CLOSET CONNECTION.

Size, 1¼ x 1¼, each ... 2.00
" 1⅜ x 1½, " ... 2.00
" 1½ x 1½, " ... 2.00



N. P. SLIP JOINT ELBOW.

Size, 1¼ x 1¼, each ... 1.00
" 1⅜ x 1½, " ... 1.00
" 1½ x 1½, " ... 1.00



No. 1.
N. P. CHAIN STAY.
Per doz ..... .90



No. 2.
N. P. CHAIN STAY.
Per doz 1.05



No. 3.
N. P. CHAIN STAY.
Per doz 1.55



No. 4.
N. P. CHAIN STAY.
Per doz 1.65



No. 6.
N. P. CHAIN STAY.
Per doz 2.15

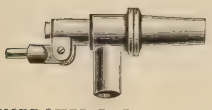


No. 7.
N. P. CHAIN STAY.
Per doz 3.50



No. 5.
N. P. COCK HOLE COVER.
Per doz 1.45

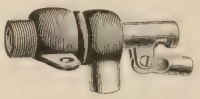
Ball Cocks, Plugs and Strainers, Etc.



IMPROVED BALL COCK.
Lead Pipe.



IMPROVED BALL COCK.
Iron Pipe.



BIRKERY HIGH PRESSURE
BALL COCK.



FOSTER HIGH PRESSURE
BALL COCK.

Improved Ball Cocks.

Size	½	⅝	¾	1	1¼	1½	2	3	4
Per dozen	$12	14	20	34	56	80	150	400	800

High Pressure Ball Cocks.

Birkery Ball Cock.

No. 1. Top, Bottom or Side Supply, per dozen 15.00

Foster Ball Cock.

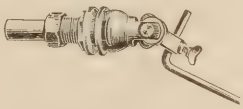
Lead or Iron Pipe, Top, Bottom or End Connection, per dozen 30.00
Nickel Plated Nuts, Couplings and Tail Pieces Extra.
4-inch Copper Floats and Rods, per dozen 6.00



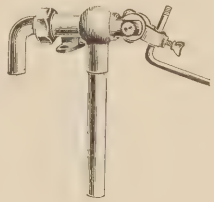
No. 1.
BASIN CLAMP.
Per dozen... 1.25



No. 2.
BASIN CLAMP.
Per dozen... 1.50

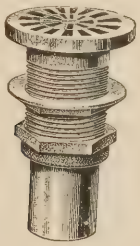


B. B. HIGH PRESSURE BALL COCK.
For Bottom Supply.
Per dozen, with 5-inch Floats.. 22.00



B. B. HIGH PRESSURE BALL COCK.
For Top Supply.
Per dozen, with 5-inch Floats.. 22.00

Tail piece will be left plain for lead pipe unless otherwise ordered.



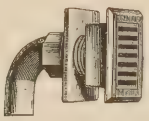
KITCHEN SINK STRAINER
AND COUPLING.
Per dozen..... 21.00

COPPER BALLS.

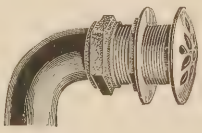
Size	4	5	6	7	8	10	12
Per doz	4.50	6.00	7.00	10.50	80c. per pound.		



COPPER BALL.



PANTRY SINK OVERFLOW
GRATE AND COUPLING.
Per dozen..... 11.00



WASH TRAY OVERFLOW
GRATE AND COUPLING.
Per dozen..... 15.00



FOR SOAP-STONE WASH TRAY.

Size	1	1¼	1½	2
Finished, per doz	$15	16	26	40
Nickel Plated, per doz	17	19	29	44
Silver Plated, "	21	23	33	48



COMMON OVERFLOW FOR BASIN.

Finished, per doz	8.00
Nickel Plated, per doz	8.50
Silver Plated, "	10.00



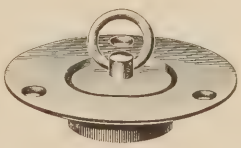
PATENT OVERFLOW FOR BASIN.

Finished, per doz	9.00
Nickel Plated, per doz	9.50
Silver Plated, "	11.00



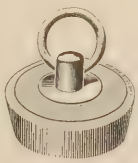
SINK OR BATH PLUG, WITH RUBBER STOPPER.

Size	1	1¼	1½	2	2½
Fin., per doz	2.50	3.00	4.00	7.00	15.00
N. P., "	3.50	3.50	4.50	8.00	17.00



WASH TRAY PLUG.

Size	1¼	1½	2	2½	3
Per doz	6.00	7.00	10.00	17.00	22.00



RUBBER STOPPER.

Size	⅞	1	1¼	1½	2
Per doz	2.50	2.50	3.00	3.25	4.00

Closet and Urinal Stall Trimmings.



Fig. 1.
END LEG.



Fig. 2.
RUNNING LEG.



Fig. 3.
CORNER LEG.

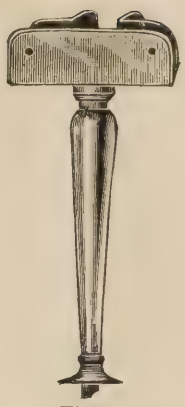


Fig. 4.
CENTER LEG.

Figure	1	2	3	4
Polished Brass, with Bolts and Nuts, each	3.20	3.20	3.40	4.00
Nickel Plated, with Bolts and Nuts, each	3.50	3.50	3.70	4.50



Fig. 31.
FANCY ANGLE.



Fig. 37.
BOLT, NUT AND WASHER.



Fig. 45.
RAISED STRAINER.
For Urinal Trough.



Fig. 54.
URINAL INLET CONNECTION.
Iron Pipe.



Fig. 55.
URINAL INLET CONNECTION.
For Brass Pipe, with Slip Joint Nut.

Figure	31	37	45	54	55
Polished Brass, each	.60	.09	4.00	.80	.80
Nickel Plated, each	.70	.10	4.50	.90	.90

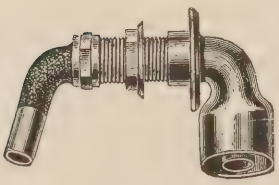


Fig. 57.
URINAL INLET CONNECTION.

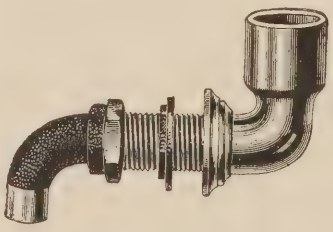


Fig. 59.
URINAL INLET CONNECTION.
Adjustable with Flange, Nut and Bent Coupling.

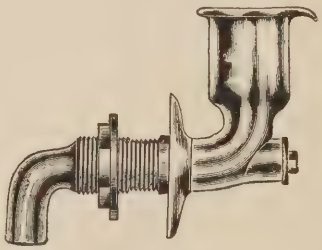


Fig. 60.
URINAL INLET CONNECTION.
With Flange, Nut, Bent Coupling and Clean-out.

Figure	57	59	60
Polished Brass, each	1.80	3.20	3.60
Nickel Plated, each	2.00	3.50	4.00

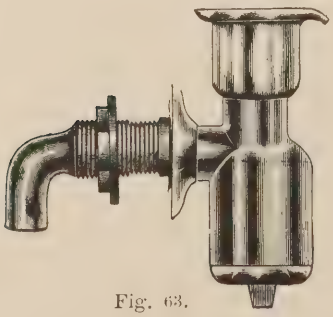


Fig. 63.
BRASS URINAL TRAPS.
Adjustable, with Waste only.

Figure	63	64
Polished Brass, each	3.60	4.20
Nickel Plated, each	4.00	4.50

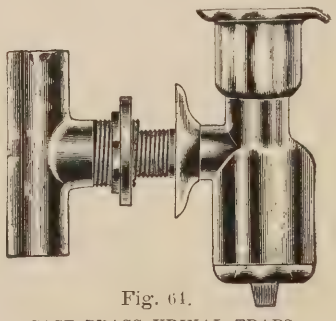
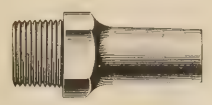
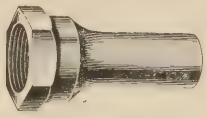


Fig. 64.
CAST BRASS URINAL TRAPS.
Adjustable, with Vent and Waste.

Soldering Unions, Nipples and Couplings.



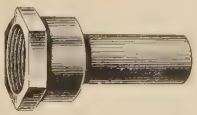
SOLDERING NIPPLE, MALE.



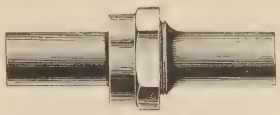
SOLDERING NIPPLE, FEMALE.

Soldering Nipples.

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Male, per dozen	1.75	2.25	2.50	3.00	5.00	7.50	10.00	14.00	20.00	28.00
Female, "	1.75	2.25	2.50	3.00	5.00	7.50	10.00	14.00	20.00	28.00



SOLDERING UNION.

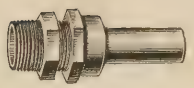


PLAIN COUPLING.

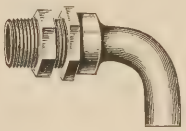
Soldering Unions and Couplings.

Size	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Soldering Unions, per doz	2.25	2.75	3.25	----	4.00	6.00	8.50	12.00	18.00	30.00	42.00
Plain Couplings, "	3.00	3.50	4.00	5.00	6.50	10.00	15.00	20.00	30.00	42.00	66.00
" " Ground Joint, per doz	4.00	4.50	5.00	6.50	8.00	12.00	18.00	24.00	36.00	48.00	75.00

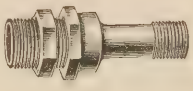
Range Boiler Couplings—Ground Joint.



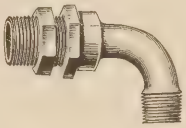
STRAIGHT FOR LEAD PIPE.



BENT FOR LEAD PIPE.



STRAIGHT FOR IRON PIPE.



BENT FOR IRON PIPE.

Boiler Couplings for Lead Pipe.

Size ---- 1-inch Pipe Thread with Tail for 3/4-inch Lead Pipe.
Per Set (3 Bent and 1 Straight) ---- 2.50

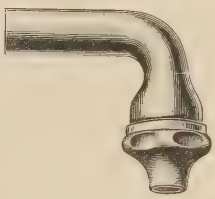
Boiler Couplings for Iron Pipe.

Size ---- 1-inch Pipe Thread with Tail for 3/4-inch Iron Pipe.
Per Set (3 Bent and 1 Straight) ---- 3.00

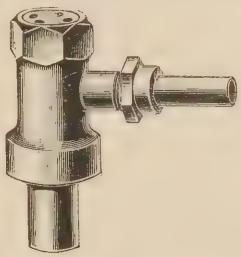
Safety and Vacuum Valves for Range Boilers.



SAFETY VALVE
FOR COPPER OR IRON BOILERS.
Per doz ---- 48.00



VACUUM VALVE,
BOSTON PATTERN.
Size ---- 5/8
Per doz ---- 12.00



VACUUM VALVE.
Size ---- 5/8
Per doz ---- 24.00



VACUUM AND SAFETY VALVE,
FOR KITCHEN RANGE BOILER.
Each ---- 4.50

Improved Boiler Stands.

Height, 21 Inches.

Size Ring	11 1/2	12	13	13 1/2	14	15	16	17	18	20	22	24
Plain	1.25	1.25	1.30	1.35	1.40	1.50	1.75	1.85	2.00	2.25	2.75	3.50
Galvanized	2.50	2.50	2.60	2.70	2.70	3.00	3.25	3.60	3.80	4.50	5.00	6.50

Extension Piece to raise stand 30 inches, plain, each ---- .50
Galvanized, each ---- .75



VACUUM VALVE
FOR IRON PIPE.

Size	3/4	1	1 1/4	1 1/2	2
Per doz	$24	30	36	54	84



IMPROVED BOILER STAND.

Climax Soil Pipe Plugs and Closers.



CLIMAX SOIL PIPE PLUG.



RATCHET NUT PLUG.



SMOKE MACHINE TEST PLUG.

Climax Soil Pipe Plugs.

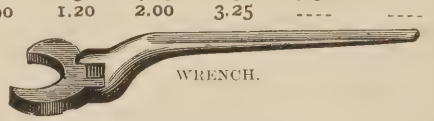
For hub ends, Plug next size larger than bore of pipe must be used ; i. e., for the hub of a 4-inch pipe use a 5-inch Plug.

Wing Nut and Ratchet Nut Climax Soil Pipe Plugs.

Size	2	3	4	5	6	7	8	9	10
Each	1.00	1.25	1.50	2.00	2.50	4.25	6.50	9.50	11.00
Extra Rubbers	.25	.50	.70	.90	1.20	2.00	3.25	----	----

Ratchet Nut made only in 3, 4, 5, 6, 7, 8, 9, 10 inch.

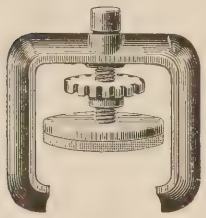
Wrench for Ratchet Nut Plugs, fits all sizes ..... .20



WRENCH.

Smoke Machine Test Plug with 1-inch Pipe for Admitting Smoke.

Size	2	3	4	5	6
Each	1.50	2.00	2.50	3.50	4.50

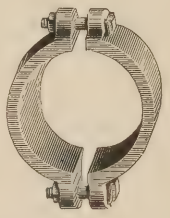


SOIL PIPE CLOSER.

Soil Pipe Closer.

This Closer will operate on either the hub or bead end of a fitting. The collar castings are provided with strips on the ears, thereby preventing the revolution of the bolt heads. Only one wrench is needed to tighten these collars. The Collar is used only when it is desired to fasten closer to the spigot end of pipe.

Size	2	3	4	5	6
Closer	1.25	1.50	2.00	2.50	3.25
Collars	.30	.40	.50	.60	.70
Extra Rubbers	.40	.60	.80	1.00	1.20
Wrenches	.20	.20	.20	.20	.20



COLLAR CASTING.

Running Trap Closer.

This Closer is designed to enable the plumber to apply a pressure test to a house drain without having any part of same disconnected for such a purpose, and can be used in ordinary running trap having vents of same diameter as pipe.

Size	4	5	6	8
Each	3.00	4.00	5.00	8.00

Hopper Trap Closer.

Each ..... 2.25 Wrench ..... .20



Desper Double Testing Plug.

Size	2	3	4	5	6	7	8	10
Each	2.50	3.50	4.50	6.00	7.50	9.00	11.00	14.00

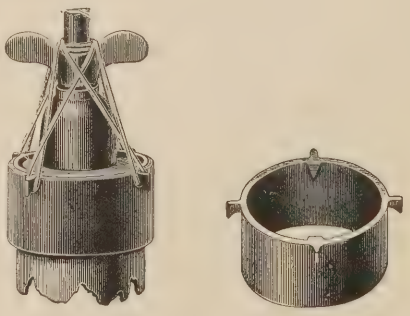
Climax Testing Band.

A rigid metallic band to be placed over end of lead trap, pipe or bend, to permit the use of Climax Soil Pipe Testing Plug in cases where testing with lead connections is required or desired.

By the use of this simple device the use of the expensive and unreliable "soldered end" is obviated.

Notches may be cut in top of lead to correspond with inner lugs, band dropped over trap, pipe or bend. Let the lead stand one-eighth of an inch above band, turn lead over edge of band, insert plug and lash to outside ears, and absolute security is obtained against longitudinal or lateral movement.

Price, 4-inch, per dozen 6.00



TESTING BAND.

Plumbers' Tools.



BRASS BLOW PIPE, PLAIN.

Size	8	9	10	12
Per doz.	2.50	2.50	2.50	2.50



BOSSING STICKS.

Boxwood, per dozen 9.00
Dogwood, " 6.00



ROUND IRONS.

No.	1	2	3
Per doz.	8.00	10.00	12.00



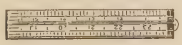
SOIL BRUSH.

Per dozen .80



CHIPPING KNIFE.

Size of Blade	4½	5	6
Per dozen	4.50	5.00	5.50



RULE.

	Per Doz.
2-ft. Rule, plain	4 00
" " brass bound	15.00



PLAIN COMPASS.

Size	Per Doz.
5	3.50
6	4.00
7	4 75
8	5.50
9	6.50
10	7.50
12	8.00



BRASS GREASE, ROSIN AND FLOUR BOX, SPUN BRASS.

Small, per dozen 15.00
Medium, " 18.00
Large " 21.00



POT HOOK.

Per dozen 1.50



BRASS BLOW PIPE, WITH BULB.

Size	10
Per dozen	4.00



SIDE EDGERS.

Boxwood, per dozen 6.00
Dogwood, " 4.00



WIPING CLOTH.

Mole Skin, per doz. 2.50
Ticking " 1.20



DUSTER.

Per dozen 7.00



MEASURING TAPE.

Feet	25	50	75	100
Per doz.	3.75	5.00	7.50	9.00



SMALL FANCY CALIPERS.

Per dozen 3.50



½ ROUND RASP.

Size	10	12	14
Per doz.	13.70	18.70	24.80



BRASS GREASE, ROSIN AND FLOUR BOX, CAST BRASS.

Three parts, per doz 22.00
Two " " 18.00



CANDLE HOLDERS.

Per dozen 3.00



DOGWOOD MALLET.

Size	3 & 5
Per dozen	5.50



SWIVEL HATCHET COPPERS.

2 lbs. to pair and heavier, per lb .51



LOOKING GLASS.

Brass Back, per doz. 5.00



WROUGHT IRON DOUBLE LIPPED LADLES.

Size.	Per Doz.	Size. Extra Heavy.	Per Doz.
2½	2.75	7	12.00
3	3.50	8	15.00
3½	4.00	9	20.00
4	4.75	10	24.00
5	6.50		
6	8.00		



CALIPERS.

Size.	Per Doz.	Size.	Per Doz.
2½	2.40	9	5.90
3	2.65	10	6.50
4	2.85	12	8.00
5	3.30	15	10.50
6	3.75	18	14.00
7	4.40	20	17.00
8	5.35	24	22.00



TURN PIN.

	Per Doz.
Boxwood, No. 1, 2, 3	2.50
Dogwood, " 1, 2, 3	1.30



BUZZLE PATENT BASIN WRENCH.

Per dozen 22.00



SOLDERING IRONS.

	Per l.b.
1½ lbs. per pair	.47
2 lbs. per pair & heavier	.43
	Per Doz.
Large handles for above	.80



POLISHED SOIL CUP.

	Per Doz.
With Handle	5.00
Without Handle	4.50
With Bottom & Handle	6.00



SQUARE.

2-Foot Steel Square.

Per dozen 5.00



PLUMB BOB.

Plumb Bob, per doz. 6.00
Iron, plain, " 3.00



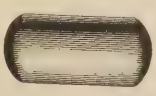
DRESSER.

Boxwood, per doz. 12.00
Dogwood, " 8.00



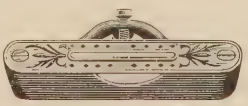
TORCH.

	Per Doz.
Tin, Top Filler	9.00
" and Side Filler	9.50
Brass, Top Filler	16.00
" " and Side Filler	17.50



DRIFT PLUG.

	Per Doz.
Boxwood, ½, ¾, 1, 1¼, 1½, 2	1.80
Dogwood, ½, ¾, 1, 1¼, 1½, 2	1.20



SPIRIT LEVEL.

	Per Doz.
Pocket Spirit Level	2.00
Regular Wood Spirit Level	5.00

Plumbers' Tools.

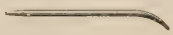
Steel Bending Pins.



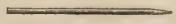
BENT, TWO ENDS.
Per dozen..... 3.20



NO. 2. BENT, ONE END.
Per dozen..... 3.20



NO. 3. BENT, ONE END.
Per dozen..... 3.20



STRAIGHT, ONE END POINTED.
Per dozen..... 3.20

All the above Extra Heavy, per dozen.....4.00

Chisels.



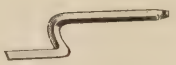
STUB CALKING CHISEL.
Per dozen..... 3.20



REGULAR CALKING CHISEL.
Per dozen..... 3.20



RIGHT HAND CALKING CHISEL.
Per dozen..... 3.20



LEFT HAND CALKING CHISEL.
Per dozen..... 3.20



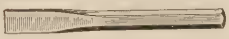
OCTAGON STEEL SPRING PACKING CHISEL.
18 inches long, per dozen..... 8.00



CALKING CHISEL, FOR CORNERS.
Per dozen..... 5.00



YARNING CHISEL.
Per dozen..... 3.20



COLD CHISEL.
¼ to ⅜ inch, per lb. .50
½ to 1 " " .40



BRICK CHISEL.
Size of Bit, 3½ to 4 inch, per lb..... .60



CAPE CHISEL.
Per dozen..... 4.00



DIAMOND NOSE CHISEL.
Per dozen..... 4.00



HALF ROUND NOSE CHISEL.
Per dozen..... 4.00



ROUND NOSE CHISEL.
Per dozen..... 4.00



PICKING CHISEL.
Per dozen..... 4.00



STEEL WOOD CHISEL.
1-inch, per dozen..... 4.00



STEEL WOOD GOUGE.
1-inch, per dozen..... 4.25



FIRMER CHISEL.

	Per Doz.
½ and ¾ inch Extra Heavy Tanges and Blades	4.50
1-inch Extra Heavy Tanges and Blades	6.00
1¼ " " " "	7.00



FIRMER GOUGE.

	Per Doz.
½-inch Extra Heavy Tanges and Blades	5.00
5/8 " " " "	5.50
¾ " " " "	6.00
7/8 " " " "	6.75
1 " " " "	7.50



NO. 1. FLOOR CHISEL.
1½-inch, per dozen..... 6.00



NO. 2. FLOOR CHISEL.

2 inch, per dozen	8.00
2½ " "	11.00
3 " "	12.00
3½ " "	14.00
4 " "	16.00



ROUND KINKING IRON.
Per dozen..... 4.00

Saws.



COMPASS SAW.

Per Doz.
10, 12, 14 inch..... 5.00



PANEL SAW.

12-inch, per dozen	8.00
14 " "	10.00



DOUBLE EDGE SAW.

12-inch, per dozen	10.00
14 " "	11.00



HACK SAW.

	Per Doz.
For 8-inch Blades	6.50
Adjust. 8 to 12 in. Blade	24.00
Extra Blades, 8-inch	1.30
" " 9 to 12 in.	2.10

Plumbers' Tools.



ROUND NOSE PLIERS.

6-inch, per dozen..... 10.80



FLAT PLIERS.

6-inch, per dozen..... 10.00



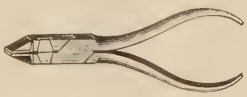
ANGULAR CUTTING PLIERS.

Per dozen..... 14.00



CUTTING NIPPERS.

6-inch, per dozen..... 11.00



SIDE CUTTING PLIERS.

6-inch, per dozen..... 14.00



GAS PLIERS, FULL POLISH.

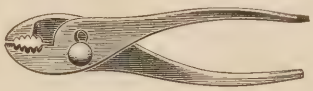
Size	4	5	6	7	8	9
Per doz	4.80	6.50	6.50	7.40	8.25	9.25

Size	10	11	12	13	14
Per doz	10.70	12.00	13.00	15.00	17.00



BURNER PLIERS.

Size	5	6	7
Per dozen	6.50	6.50	10.00



COMBINATION PLIERS.

Size	6	10
Black, per dozen	13.50	18.00
Nickel, "	15.00	21.00



SNIPS.

No	6½	7	8
Size of Cut	4½	4	3½
Each	3.00	2.50	2.00

No	9	10	9 Circular.
Size of Cut	3	2½	3
Each	1.50	1.40	2.50



GAS FITTERS' AUGER.

Size Auger, inches	⅝	¾	⅞	1¼	1½	1¾	2	2½
" Pipe, "	¼	⅜	½	¾	1	1¼	1½	2

50 cents per ¼ inch Auger measurement.



OVAL SHAVE HOOK.

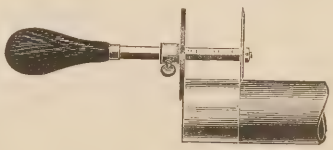


HALF OVAL SHAVE HOOK.



PATENT ADJUSTABLE SHAVE HOOK.

Per dozen..... 8.00



PATENT GAUGE SHAVE HOOK.

Per dozen..... 10.00

	Per Doz.
Oval, Half Oval and Triangular Shave Hooks	3.00
Square, with Projecting Points for Corners	4.00
Shave Hooks for Heavy Sheet Metal	3.00
Loose Shave Hook Blades	1.00



SCREW DRIVER.

Size	5	6	8	10	12	14
Per dozen	2.00	2.00	2.50	2.50	3.00	3.00

Screw Driver Handles, per dozen..... .80



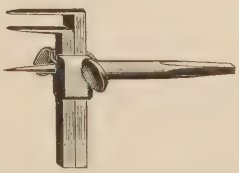
TAP BORER.
PHILADELPHIA PATTERN.

Per dozen..... 5.00



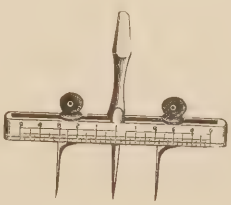
TAP BORER.
NEW YORK PATTERN.

Per dozen..... 3.50



WASHER CUTTER.

Per dozen..... 10.00



REGISTERING WASHER CUTTER.

Per dozen..... 20.00

Plumbers' Tools.



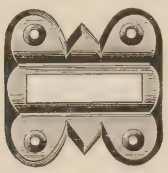
PLUMBERS' PREPARED SOIL.

Pint	.20
Quart	.35
Dry Soil, per box	.35



PLUMBERS' BAG, OLD STYLE.

No. 1. Each 3.75



PLAIN DOUBLE TACK MOULD.

Each 2.00



EXTENSION BITS.

Small, per dozen	18.00
Large, " "	26.00



PLUMBERS' BAG, NEW STYLE.

No. 5. Each 3.75



BIBB SEAT DRESSER.

For ½ and ⅝ inch Bibbs and Bath Cocks. Three Cutters with each Dresser.

Each 2.00



WING DIVIDERS.

Size	5	6	7	8
Per dozen	5.50	5.50	6.50	7.50
Size	9	10	12	
Per dozen	9.00	10.00	12.00	



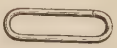
PIG LEAD MOULD.

Each 2.40



PIG MOULD.

2 Bars, each	.90
4 " "	1.20



SPLIT LINKS FOR SAFETY CHAINS.

Small Brass, per gross	1.50
Large " "	1.75
For Nickel Plated or Silvered, add to Net Price of Brass, per gross	.10



BASIN, BATH AND WASH TRAY CHAINS AND SNAPS.

Plumbers' Safety Chains and Snaps.

Price per Box of 12 Lengths :

No. 00.	Basin Chains, 16 inches long, Brass		.95
" 0.	" " 16 " " "		1.00
" 1.	" " 16 " " "		1.20
" 0.	Wash Tray Chains, 20 in. " "		1.25
" 1.	" " " 20 " "		1.40
" 2.	" " " 20 " "		1.55
" 0.	Bath Tub Chains, 26 " "		1.35
" 1.	" " " 26 " "		1.60
" 2.	" " " 26 " "		1.80

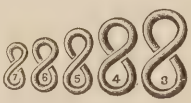
For Nickel Plated or Silvered, add to Net Price of Brass :

On Basin Chains, all Nos., per dozen	.05
" Wash Tray Chains, all Nos., per dozen	.06
" Bath Chains, " "	.07

Plumbers' Safety Chains, on reels of 500 feet, Brass :

No. 000.	Per hundred feet	3.30
" 00.	" " "	3.60
" 0.	" " "	4.30

For Nickel Plated or Silvered, add to Net Price per hundred feet ..... .10



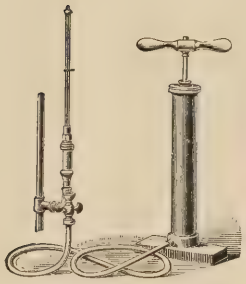
BRASS "S" HOOKS.

No. ½.	Per gross		3.25
" 1½.	" "		2.75
" 2½.	" "		2.00
" 3½.	" "		1.50
" 1.	" "		2.25
" 2.	" "		1.80
" 3.	" "		1.50
" 4.	" "		1.30
" 5.	" "		1.10
" 6.	" "		.90
" 7.	" "		.85

For Nickel Plated or Silvered, add to Net Price of Brass :

On Nos. ½ to 2½, per gross	.12
" 3 " 7, "	.08

Plumbers' Pumps, Furnaces, Etc.



GAS FITTERS' PROVING PUMP AND GAUGE.

Pump with six feet of ⅜-inch rubber hose, cock and mercury column.

Complete	25.00
Pump only	15.00
Mercury Gauge	10.00
Extra Glass Tubes for Mercury Gauge	1.00
Cock with Ether Cup	5.00
Hose, per foot	.50



FORCE PUMP WITH STIRRUP.

Each 15.00



GAS MAIN OR CLEARING PUMP.

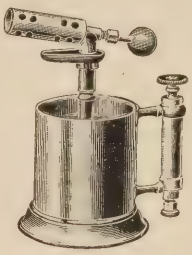
Complete, with Cock.

Each 30.00



PLAIN FORCE PUMP.

Each 12.00



IMPERIAL BLOW TORCH.

Imperial Blow Torch.

A complete tool for brazing, burning paint, thawing frozen pipes, etc. Burns four hours with one filling.

Price, each 5.00



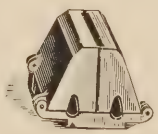
SOLDER POT.

Solder Pots.

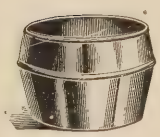
Sizes, inches	5	6	8	10½
Each	.50	.65	1.10	1.75



H. J. & C. PLUMBERS' BLAST FURNACE.



SHIELD NO. 3.



SHIELD NO. 2.

H. J. & C. Plumbers' Blast Furnace.

Weight of Furnace, 7 pounds.
Height of Furnace, 17 inches.

This Furnace will melt 10 pounds solder in 6 minutes. Recommends itself as being safe, simple, quick, handy, reliable and economical. Full directions for use accompany each Furnace. A special pot made for electric lineman's use.

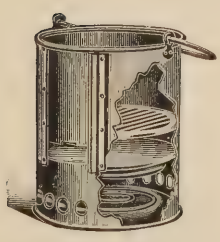
Furnace with Two Shields, suitable for Large or Small Solder Pot, each 6.00

Furnace with Two Shields and Hood, for Solder Coppers .. 7.50

The Bowsky Plumbers' Furnace.

No.	Diameter. Inches.	Height. Inches.	Weight. Pounds.	Price.
4	8	14	9	2.50
5	9	14	10	3.00
6	10	14	10	4.00

Extra Grates, Nos. 4 and 5 ..... .30
" " " 6 ..... .40

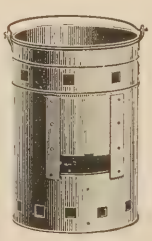


BOWSKY PLUMBERS' FURNACE.

The Conran Plumbers' Furnace

Has the advantage of a detachable fire pot, which can be renewed, prolonging the life of the Furnace indefinitely. Recommended as thoroughly practical and up to date.

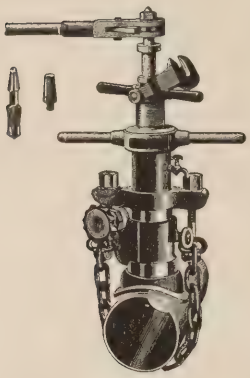
Per dozen 36.00
Extra Fire Pots, with Grates, per dozen 8.40



CONRAN PLUMBERS FURNACE.

Columbia Water Pipe Tapping Machine.

Taps Mains and Inserts Corporation Cocks from ⅜ to 1 Inch Inclusive.



IMPROVED COLUMBIA WATER PIPE TAPPING MACHINE.

Water Tapping Machine, complete, includes:
1 each, combined Drill and Tap—½, ⅝, ¾, 1 inch.
4 Malleable Iron Saddles, any size.
1 each, Screw or Hexagon Plug—½, ⅝, ¾, 1 inch.
1 Chain for any size pipe.

Power Clevis extra, 5.35. Power Clevis is never sent with a complete Tapping Machine unless specially ordered.

The Power Clevis is an extra attachment, and is needed only where very heavy pressure exists, say 90 pounds or upwards. With this attachment a Corporation Cock can be inserted against any existing high pressure.

In ordering a machine it is necessary to state the size of tools required, whether screw or hexagon plugs are wanted, and also sizes of water mains to be tapped. If style of plug is not mentioned, screw plugs will be sent. If sizes of mains are not mentioned, saddles for 4, 6, 8 and 10 inch mains will be sent.

Improved Columbia Water Pipe Tapping Machine, complete..... 100.00

Hadesty Water Pipe Tapping Machine.

This machine drills and taps the hole in one operation, and will tap a street main from 2 to 30 inches in diameter. No saddles are required for the different sizes of mains.

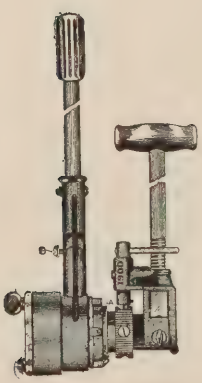
The Hadesty machine is water tight against any pressure; it weighs, complete, but 18 pounds, and its construction is so simple that it can be operated by any workman. Taps water and gas mains without waste.

Hadesty Tapping Machine, complete, with ½, ¾ and 1 inch Taps..... 50.00



HADESTY TAPPING MACHINE.

Climax Ratchet Stock.



CLIMAX RATCHET STOCK.

The great difficulty and inconvenience of threading iron pipe in ditches, under floors, in corners, overhead, etc., are so well known to all who have attempted it that a tool which will do this work quickly and conveniently will be promptly appreciated.

With this tool it is not necessary to dig up or take out whole lengths of pipe; the defective part of pipe can be cut out and the threads cut on the pieces in the ground with the greatest ease and convenience, not only saving time, but avoiding much unnecessary and disagreeable work.

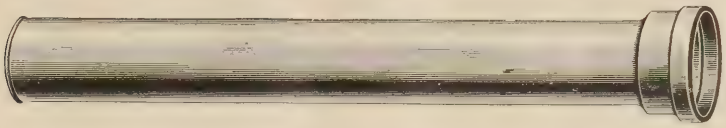
Every tool is guaranteed and any part can be duplicated.

Any standard make of solid square die will fit. Dies, if furnished, are extra

No. 1 threads ¼ to 1 inch Pipe, takes Die 2, 2⅜ and 2½ inch square..... 10.00
No. 2 threads 1 to 2 inch Pipe, takes Die 2⅜, 2½, 3, 3⅞ and 4 inch square..... 17.00
Pipe Dies, 2⅜ inch square 2.00
" " 3⅞ " " 3.50

This stock is attractively finished in nickel and japan, and every one is shipped in a strong wooden box, with full directions for operating.

Bell and Spigot Cast Iron Gas and Water Pipe.



In lengths 12 feet 4 inches long, including Bell ; 440 lengths per mile, laid.

Gas Pipe—22 lbs. Pressure.

Diameter	3	4	5	6	8	10	12	14	16	18	20	24
Weight per foot, pounds	11½	17	22	27	40	52	65	95	112	135	155	190
Thickness, inches	.32	.37	.38	.40	.45	.47	.50	.59	.61	.66	.68	.70

Gas Pipe—43 lbs. Pressure.

Diameter	3	4	5	6	8	10	12	14	16	18	20	24
Weight per foot, pounds	12	18	24	28	42	55	70	100	120	140	165	200
Thickness	.34	.39	.40	.42	.47	.49	.53	.62	.65	.70	.70	.73

Water Pipe for 200-foot Head—86 lbs. Pressure.

Diameter	3	4	5	6	8	10	12	14	16	18	20	24	30	36	48
Weight per foot, pounds	13	20	25	30	45	60	75	105	125	150	175	225	330	425	670
Thickness	.36	.41	.42	.44	.49	.53	.56	.65	.69	.74	.75	.82	.94	1.04	1.23

Water Pipe for 300-foot Head—130 lbs. Pressure.

Diameter	3	4	5	6	8	10	12	14	16	18	20	24	30	36	48
Weight per foot, pounds	14	21	26	33	47	65	80	110	135	160	190	250	370	485	775
Thickness	.38	.43	.45	.48	.52	.57	.59	.68	.73	.78	.80	.91	1.05	1.18	1.42

Water Pipe for 400-foot Head—174 lbs. Pressure.

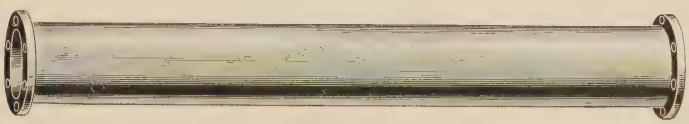
Diameter	3	4	5	6	8	10	12	14	16	18	20	24	30	36	48
Weight per foot, pounds	15	22	27	35	50	70	86	116	145	167	205	275	415	545	880
Thickness	.41	.45	.47	.50	.55	.61	.63	.73	.78	.80	.86	.99	1.18	1.32	1.60

Yarn and Lead, per Joint.

Size Pipe	3	4	5	6	8	10	12	14	16	18	20	24	30	36	48
Pounds per Joint, Yarn	.14	.19	.30	.36	.50	.60	.75	.84	1.00	1.10	1.20	1.50	1.80	2.16	2.90

LEAD.—About 1½ to 2 pounds per inch of Diameter.

Cast Iron Flanged Pipe, Medium Weight.



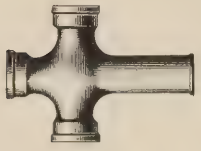
Made in Standard 12-foot Lengths.

Diameter	3	4	6	8	10	12	14	16	18	20	24	30	36	40	48
Thickness	⅜	7/16	15/32	½	9/16	⅝	⅝	11/16	¾	¾	⅞	1	1 1/32	1 1/8	1 1/4
Approximate Weight, foot, pounds	13	20	32	45	63	83	100	125	150	171	225	333	417	500	667
Diameter of Flanges	7½	9	11	13½	16	19	21	23½	25	27½	31½	40	46	50	58
Number of Bolts	4	4	8	8	12	12	12	16	16	20	20	20	24	26	30
Size of Bolts	½	⅝	⅝	⅞	¾	¾	⅞	⅞	1	1	1	1	1	1	1 1/8
Length of Bolts	2½	3	3	3	3½	3½	4	4	4½	4½	4½	5	5 3/8	5 5/8	6

Flanged Fittings for Flanged Cast Iron Pipe quoted on Application.

NOTE—Bell and Spigot and Flanged Cast Iron Pipe is quoted only on specifications covering quantities, pressures, etc.

Bell and Spigot Fittings for Cast Iron Pipe.



CROSS.



TEE.

Crosses and Tees.

Size	3 x 2	3	3 x 4	4 x 2	4 x 3	4	5	6 x 3	6 x 4
Cross, Weight, each	70	81	126	87	100	120	154	175	185
Tee, Weight, each	50	58	95	70	80	90	125	138	148

Size	6 x 6 x 6 x 4	6	8 x 4	8 x 8 x 6 x 4	8 x 6	8 x 8 x 8 x 6	8	10 x 4	10 x 6
Cross, Weight, each	210	232	240	249	260	273	285	320	330
Tee, Weight, each	----	170	210	----	205	----	215	265	280

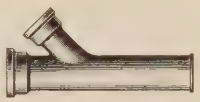
Size	10 x 8	10	12 x 4	12 x 6	12 x 8	12 x 10	12	14 x 4	14 x 6	14 x 8
Cross, Weight, each	380	410	543	440	480	550	575	612	633	665
Tee, Weight, each	300	315	360	375	400	420	440	562	575	585

Size	14 x 10	14 x 12	14	16 x 4	16 x 6	16 x 8	16 x 10	16 x 12	16 x 14	16
Cross, Weight, each	685	705	720	730	750	775	795	875	930	973
Tee, Weight, each	600	645	684	610	625	657	665	680	705	797

Size	18 x 4	18 x 6	18 x 8	18 x 10	18 x 12	18 x 14	18 x 16	18	20 x 4	20 x 6
Cross, Weight, each	875	923	960	974	1030	1140	1191	1276	871	891
Tee, Weight, each	820	843	848	873	880	895	935	990	830	840

Size	20 x 8	20 x 10	20 x 12	20 x 16	20	24 x 4	24 x 6	24 x 8	24 x 10
Cross, Weight, each	926	940	941	1056	1315	1560	1600	1670	1716
Tee, Weight, each	855	868	909	973	1050	1510	1535	1570	1600

Size	24 x 12	24 x 14	24 x 16	24 x 18	24 x 20	24
Cross, Weight, each	1800	1836	1870	1915	1980	2260
Tee, Weight, each	1628	1635	1640	1730	1810	1850



Y BRANCHES.

Size	3 x 2	3 x 3	4 x 4	5 x 5	6 x 4	6 x 6	6 x 6	6 x 6	8 x 4	8 x 6	8 x 8	10 x 4
Weight, each	75	87	118	150	180	220	212	212	240	275	335	335
Degree	45	45	45	45	45	45	30	37	45	45	45	45

Size	10 x 6	10 x 8	10 x 10	12 x 4	12 x 6	12 x 8	12 x 10	12 x 12	14 x 4	14 x 6	14 x 8	14 x 10	14 x 12
Weight, each	360	380	405	500	515	528	500	600	580	590	614	630	650
Degree	45	45	45	45	45	45	45	45	45	45	45	45	45

Size	14 x 14	16 x 4	16 x 6	16 x 8	16 x 10	16 x 12	16 x 14	16 x 16	18 x 18	20 x 8	20 x 20	24 x 24	24 x 24
Weight, each	672	662	680	700	720	750	800	874	1022	902	1192	2150	2090
Degree	45	45	45	45	45	45	45	45	45	30	45	45	60

Quoted only on specifications of quantities, pressures, etc.

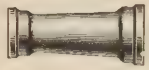
Bell and Spigot Fittings for Cast Iron Pipe.



INCREASER.



REDUCER.



REDUCER OR INCREASER.
Bell both Ends.

Size	10 x 8	12 x 10
Weight, each	140	320

Increasers.

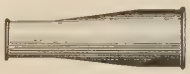
Size	2 x 4	2 x 6	3 x 4	3 x 6	4 x 6	4 x 8	4 x 10	4 x 12	6 x 8	6 x 10	6 x 12	6 x 16
Weight, each	57	58	35	61	61	70	200	125	88	195	147	358
Size	8 x 10	8 x 12	8 x 14	8 x 16	10 x 12	10 x 14	10 x 16	12 x 14	12 x 16	12 x 20	16 x 20	
Weight, each	280	163	285	380	280	320	286	315	273	401	394	

Reducers.

Size	3 x 2	4 x 2	4 x 3	6 x 3	6 x 4	8 x 4	8 x 6	10 x 4	10 x 6	10 x 8	12 x 4	12 x 6	12 x 8
Weight, each	25	29	35	64	57	66	76	72	87	102	125	142	210
Size	12 x 10	14 x 8	14 x 10	16 x 6	16 x 8	16 x 10	16 x 12	18 x 12	20 x 12	20 x 16	20 x 18	24 x 20	
Weight, each	152	325	333	260	290	327	324	386	311	311	330	660	



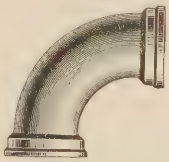
SHORT PATTERN TEE.



REDUCER OR INCREASER. WITHOUT BELLS.



BOLTED BRANCH SLEEVES.



LONG AND SHORT RADIUS ELBOWS AND BENDS.

Short Pattern Tee.

Size	4	6	8	10	12
Weight, each	115	205	295	390	510

Reducer or Increaser Without Bells.

Size	3 x 2	6 x 4	10 x 6	14 x 8	14 x 10	16 x 6	16 x 8	16 x 10	16 x 12	20 x 12	20 x 16
Weight, each	20	130	163	205	225	230	255	231	220	315	309

Bolted Branch Sleeves.

Size	4	4	6	6	8	8	10	10
Weight, each	67	80	89	105	106	124	139	163

Long and Short Radius Elbows and Bends.

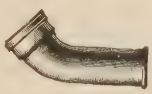
Size	3	3	3	4	4	4	6	6	6
Weight, each	32	40	35	50	100	51	82	165	130
Degree	90	90	45	90	90	45	90	90	45
Size	6	8	8	10	12	12	12	12	
Weight, each	85	135	150	210	440	350	315	265	
Degree	10	90	45	11¼	90	60	45	22½	



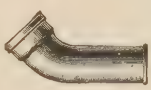
¼ OR 90° BEND.



⅛ OR 45° BEND.



$\frac{1}{16}$ OR 22½° BEND.



MISCELLANEOUS BENDS.

Size, inches	3	4	5	6	8	10	12	14	16	18	20	24
¼ or 90° Bends, lbs	40	65	85	99	147	210	299	504	600	620	742	1575
⅛ or 45° " "	32	51	80	85	112	156	216	340	407	471	546	845
$\frac{1}{16}$ or 22½° " "	38	65	--	115	140	205	265	290	355	397	487	839

Miscellaneous Bends.

Size, inches	3	4	4	4	4	6	6	6	6	8	8	10	12	12
Weight, each	28	50	63	68	78	90	95	105	130	130	160	266	350	--
Degree	12	10	15	35	60	10	15	35	60	15	40	60	60	60

Bell and Spigot Fittings for Cast Iron Pipe.



OFFSET PIPE.

Size, inches	4	4	4	6	6	6	6	6	8	8	8	8	8	10	10	10	10	10
Offset, inches	12	18	36	6	12	18	24	36	6	12	18	24	36	6	12	18	24	36
Weight, each	68	89	111	101	121	134	164	193	133	160	177	214	253	181	192	246	300	355
Size, inches	12	12	12	12	12	16	16	16	16	16	20	20	20	20	20			
Offset, inches	6	12	18	24	36	6	12	18	24	36	6	12	18	24	36			
Weight, each	244	296	335	406	480	390	470	542	602	715	596	687	804	893	1050			

Offsets for 3 inch Pipe, to offset 6, 12, 18, 24 and 36 inches.
Weights ..... 39, 44, 53, 67 and 76 pounds.



SOLID SLEEVE.



BOLTED SLEEVE.

Size, inches	3	4	5	6	8	10	12	14	16	18	20	24
Solid Sleeve, Weight, lbs	32	51	44	84	109	150	205	200	291	340	482	740
Bolted Sleeve, Weight, lbs	63	84	--	126	158	200	263	--	494	--	714	700



PLUG.

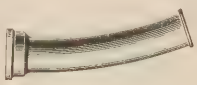


BONNET OR CAP.



CAP.

Size, inches	3	4	6	8	10	12	14	16	18	20	24
Plugs, Weight, lbs	9	12	26	30	60	80	101	--	--	181	360
Bonnets or Caps, Weight, lbs	15	21	34	47	72	107	--	180	222	310	--
Caps, Weight, lbs	19	27	40	62	70	85	138	--	--	--	440



CURVED PIPE.



BELL AND FLANGE.

Radius of Axis of Pipe is 7 ft. 6 in. in all cases.

Size	3	4	6	8	10	12	16	20
18 inches Long, Weight, each	29	47	75	100	134	182	273	385
24 " " " "	35	56	89	119	162	218	327	460
30 " " " "	40	64	104	138	189	255	381	534
36 " " " "	45	72	119	156	216	292	435	608
70 " " " "	80	125	205	270	305	477	705	977

Also make 24-inch Curves, with 15 ft. Radius of Axis, 15°, 19° and 23° in lengths of 48 inches, 60 inches and 72 inches respectively.

Bell and Flange.

Made in pipe from 3 inches to 20 inches in diameter, in lengths from 12 inches to 8 feet; 24 inches diameter, in lengths from 12 inches to 6 feet. Standard Bells and Flanges.

Gas Drip Pot.

Size Pipe	3	4	6	8	10	12	14	16	18	20	24
Weight, lbs	315	350	370	400	435	520	760	900	1164	1375	1900
Height Inside	28	28	28	28	28	33½	38	42	48	51¾	48
Width Inside Bells	18	18	18	18	18	18	22	24	26	28½	32

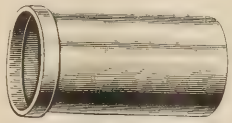


GAS DRIP POT.

Thickness of metal for all sizes, ¾ inch.

Quoted only on specifications of quantities, pressures, etc.

Salt Glazed Vitrified Sewer Pipe and Fittings.



Vitrified Sewer Pipe.

Size	2	3	4	5	6	8	9	10	12	15	18	20	22	24	30
Per Foot	.16	.16	.20	.25	.30	.50	.60	.75	1.00	1.35	1.70	2.25	2.75	3.25	5.50



ELBOW, 90°.



ELBOW, 90°—SQUARE.



CURVE, 45°.

Elbows and Curves.

Size	2	3	4	5	6	8	9	10	12	15	18	20	22	24	30
Each	.50	.50	.65	.85	1.10	2.00	2.40	3.00	4.00	5.40	6.80	9.00	11.00	13.00	27.50



TEE BRANCH.



Y BRANCH.



DOUBLE Y BRANCH.

Tee and Y Branches—2 Feet Long.

Size	2	3	4	5	6	8	9	10	12	15	18	20	22	24	30
Tee Branch	.72	.72	.90	1.13	1.35	2.25	2.70	3.40	4.50	6.10	7.65	10.13	12.38	14.63	27.50
Y Branch	.72	.72	.90	1.13	1.35	2.25	2.70	3.40	4.50	6.10	7.65	10.13	12.38	14.63	27.50
Double Y Branch	1.12	1.12	1.40	1.76	2.10	3.50	4.20	5.30	7.00	9.50	11.90	15.76	19.26	22.76	44.00

Branches with inlets 15 in. and larger, add 50 per cent. to price of Branch.



S TRAP.



½ S TRAP.



RUNNING TRAP.



RUNNING, WITH HAND HOLE.

Traps.

Size	2	3	4	5	6	8	9	10	12	15
Each	1.50	1.50	2.00	2.50	3.50	6.60	7.50	9.00	15.00	22.00



INCREASER.



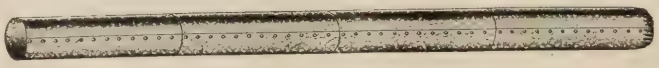
REDUCER.



SLANT.

Increasers, pipe with socket on small end.
Reducers, with socket on large end, each at price of four feet of pipe, size of larger end.
Slants—three times price of plain pipe, measured on long side.

Galvanized Round and Square House Leaders.



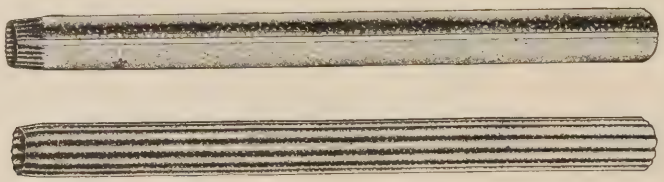
GALVANIZED RIVETED AND SOLDERED SEAM HOUSE LEADER.

Made in 10 feet lengths. Can be used also for Ventilating, Air and Blower Pipe, etc.

No. 28 Iron.

Inside Diameter	2	2½	3	3½	4	5	6
Galvanized, per foot	.13	.14	.15	.18	.20	.25	.30

For No. 27 Gauge add 2 cents to list. No. 26 Gauge add 4 cents to list.
Special sizes made to order.



PLAIN AND CORRUGATED GALVANIZED ROUND PIPE.

Made in 10 feet lengths. Without cross seam. Suitable for Conductor, Air Ventilating Pipe, etc.

No. 28 Iron.

Size	2	3	4	5	6
Per foot	.13	.15	.20	.25	.30

For No. 27 Gauge add 2 cents to list. No. 26 Gauge add 4 cents to list.
Heavier Gauges than No. 28 made in 8 feet lengths.



CORRUGATED GALVANIZED SQUARE PIPE.

Made in 10 feet lengths. Without cross seam. Suitable as Conductor, Air Ventilating Pipes, etc.

No. 28 W. G.

Size	2¼ x 1¾	3¼ x 2⅜	4¼ x 2¾	5 x 3¾
Per foot	.14	.16	.21	.26

For No. 27 add 2 cents to list. No. 26 add 4 cents to list.
Heavier Gauges than No. 28 made in 8 feet lengths.



GALVANIZED PLAIN SQUARE PIPE.

Made in 7 and 8 feet lengths. Without cross seams.

No. 28 W. G.

Size	3 x 1¾	3½ x 2¼	4 x 2¼	4½ x 2¾	5½ x 3¼	6 x 2¾
Per foot	.50	.68	.82	.85	1.00	1.05

No. 26 W. G.

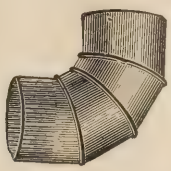
Size	6 x 3½	7 x 4½	8 x 4½	9 x 4½	10 x 4½	11 x 6½	12 x 5½
Per foot	1.20	1.35	1.45	1.60	1.70	2.00	2.00

Other sizes to order either in Galvanized Iron or Copper.

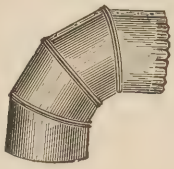
Elbows, Bends and Shoes.



No. 0. ADJUSTABLE ELBOW.



No. 00. ADJUSTABLE ELBOW.



FOUR-PIECE STIFF ELBOW.

Adjustable Elbows.

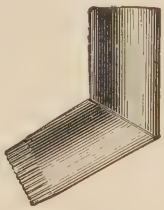
Size	1½	2	2½	3	3½	4	4½	5	5½	6	7	8	9	10	12	14
Tin, per doz	.65	.65	.75	.75	1.10	1.10	1.40	1.40	1.80	1.80	2.20	2.80	3.40	3.90	5.80	9.00
Galvanized, per doz	.70	.70	.85	1.10	1.15	1.30	1.50	1.80	2.10	2.30	2.80	3.80	4.20	5.70	7.80	10.00
Planished Iron, "						2.40	2.60	3.00	3.80	3.80	4.50	6.00				
Black, "						1.00	1.00	1.20	1.50	1.50	2.00	2.80				

Four-Piece Stiff Elbows.

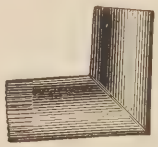
Size	4	4½	5	5½	6	7	8
Charcoal, per dozen	1.65	1.85	2.00	2.10	2.30	2.75	4.50
Planished Iron, "	3.00	3.75	4.50	5.15	5.55	7.00	----
Galvanized, "	3.50	3.75	4.00	5.50	6.00	7.00	10.00



No. 1. LEADER PIPE BEND.



No. 2. LEADER PIPE BEND.

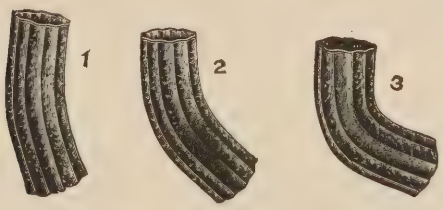


No. 3. LEADER PIPE BEND.

Leader Pipe Bends, Nos. 1, 2, 3.

Size	2	3	4	5	6
No. 1, per dozen	1.10	1.30	1.60	2.00	2.50
" 2, "	1.10	1.30	1.60	2.00	2.50
" 3, "	1.20	1.30	1.60	2.00	2.50

Corrugated Elbows and Shoes—Round and Square.



ROUND CORRUGATED ELBOWS.

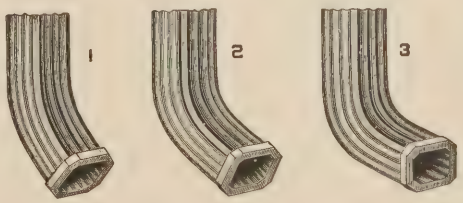


ROUND CORRUGATED SHOES.

Size	2	3	4	5	6
Elbows, each	.25	.30	.40	.50	.60
Shoes, "	.30	.36	.48	.60	.72



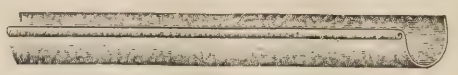
CORRUGATED SQUARE ELBOWS.



CORRUGATED SQUARE SHOES.

Size, Square	2	3	4	5	6
Elbows, either angle, each	.30	.36	.48	.60	.72
Shoes, " "	.40	.48	.60	.72	.84

Galvanized Eave Trough and Gutters.



LAP JOINT GALVANIZED IRON EAVE TROUGH, NO. 28 GAUGE.

Size	3	4	5	6	7	8
Single Bead, per foot	.13	.16	.19	.23	.27	.30
Slip Joint, Single Bead, per foot	.14	.17	.20	.24	.28	.31

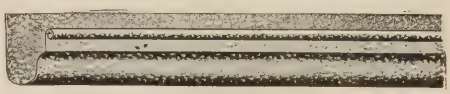
For No. 27 add 2 cents per foot. For No. 26 add 4 cents per foot to list.

Add 3 cents to list for Double Bead Gutters.



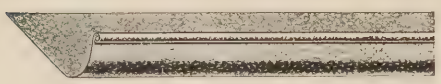
SQUARE BEADED GUTTER.

Size	6 inch.	7 inch.	8 inch.
Depth	5½ "	6 "	6 "
Girth	18 "	20 "	22 "
Per foot, Galvanized	.45	.50	.55



OVAL BEADED GUTTER.

Size	6 inch.	7 inch.	8 inch.
Depth	5½ "	6½ "	7 "
Girth	18 "	20 "	22 "
Per foot, Galvanized	.45	.50	.55



OVAL BEADED ROOF GUTTER.

14-inch Girth, ⅝-inch Bead, per foot	.35
20-inch " ⅝-inch " " " "	.50
24-inch " ⅝-inch " " " "	.60



SQUARE BEADED ROOF GUTTER.

15-inch Girth, ⅝-inch Bead, per foot	.37
20-inch " ⅝-inch " " " "	.50
24-inch " ⅝-inch " " " "	.60

Made of 28 Gauge Galvanized Steel in 8-foot lengths.

The nails used in fastening are not exposed. No wooden supports needed. In ordering specify exact pitch of roof.



GALVANIZED CORNICE AND GUTTERING

No. 7.	For Porch and Small Roofs, 10 feet or less rafters, per foot	.16
No. 8.	For Medium Sized Buildings, rafters not over 17 feet, "	.19
No. 9.	For Building 50 feet long, with 25-foot rafters, "	.24
No. 10.	For Building 75 feet long, with 35-foot rafters, "	.28
No. 11.	For Building 80 feet or more water run, "	.36

DIMENSIONS.

No. 7.	Width at top,	4	inches;	width at bottom,	2¼	inches;	height,	2¾	inches.	
No. 8.	"	"	5	"	"	"	3¼	"	"	3½ "
No. 9.	"	"	8	"	"	"	5	"	"	4 "
No. 10.	"	"	9	"	"	"	5½	"	"	6 "
No. 11.	"	"	13	"	"	"	8	"	"	8½ "

Net extra charges.—Ends and Tubes soldered in, 25 cents each.
Mitres charged as 3 feet.
Braces 10 cents each.

Leader and Eave Trough Appliances.



Fig. 1.
SINGLE BEAD EAVE TROUGH HANGER.



MALLEABLE ADJUSTABLE EAVE TROUGH HANGER.



"YANKEE" ADJUSTABLE EAVE TROUGH HANGER.

Fig. 1. Wrought Iron Galvanized Eave Trough Hangers.

Size	3	4	5	6	7	8
Each	.08	.09	.10	.11	.12	.13

Malleable Iron Adjustable Eave Trough Hangers.

Size	3	4	5	6	7	8
Galvanized, per 100	2.60	2.75	4.75	5.50	6.50	7.25
Black, "	2.00	2.00	3.00	4.00	5.00	5.00

"Yankee" Adjustable Eave Trough Hangers.

3-inch Cross Bars, per gross 6.00
4 " " " 6.50
5 " " " 7.00
6 inch Cross Bars, per gross 9.50
7 " " " 12.50

Furnished with straps from 8 to 12 inches long.
Tongs for fastening cross bars, .75.
Above sizes of cross bars are all measured across the inside of trough.



No. 7.
SHANK.



No. 9.
SHANK.



No. 12.
SHANK.



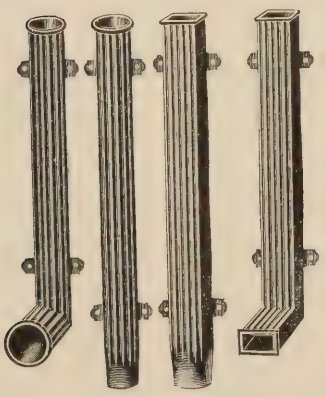
GUTTER BRACE.

Size	7	9	12
Galvanized, per 100	2.75	2.75	5.00
Black, "	2.00	2.00	3.50

Gutter Brace.

Size ..... $\frac{1}{8}$ x 1, Length, 15 inches, Galvanized, each ..... .23 Black, each ..... .17
" ..... $\frac{3}{16}$ x 1, " 18 " " " ..... .26 " ..... .20

Cast Iron Leader Shoes and Sewer Connections.



No. 1. No. 2. No. 3. No. 4.
CAST IRON LEADER SHOES AND SEWER CONNECTIONS.

No.	Size, Inches.	Length, Inches.	Each.
1	3	54	3.50
1	4	54	4.00
1	5	60	6.00
1	6	60	8.50
2	3	48	3.25
2	4	48	3.75
2	5	60	6.00
2	6	60	8.50
3	2 x 3	48	3.50
3	3 x 4	48	4.00
3	4 x 5	60	6.50
4	2 x 3	48	3.50
4	3 x 4	48	4.25
4	4 x 5	60	7.00

Leader and Eave Trough Appliances.



LEADER PIPE HEAD.



CONDUCTOR STRAINER.



RAIN-WATER CUT-OFF.

Galvanized Leader Pipe Head for Corrugated and Plain Leaders.

Size	2	3	4	5	6
Each	1.75	2.00	2.20	2.50	3.00

Galvanized and Copper Wire Conductor Strainers.

Size	2	3	4	5	6	8
Regular Galvanized, per dozen	1.50	2.00	3.00	5.00	6.00	10.50
Extra Heavy Wire Galvanized, per dozen	2.50	3.00	3.50	5.00	6.00	10.50
Copper Wire, per dozen	4.00	5.50	7.00	9.00	13.00	20.00

Rain-Water Cut-Off.

	Tin.				Galvanized Iron.				
Size	2	3	4	Size	2	3	4	5	6
Per dozen	5.00	6.00	9.00	Per dozen	8.00	10.00	14.00	18.00	22.00



WROUGHT IRON LEADER HOOKS



MALLEABLE IRON CONDUCTOR HOOKS.



SQUARE CONDUCTOR HOOKS.

Wrought Iron Leader Hooks for Wood or Brick.

Size	2	2½	3	3½	4	5	6	7	8	9	10	11	12
Galvanized, each	.05	.05	.06	.07	.08	.12	.15	.19	.24	.30	.39	.48	.60
Black, each	.04	.04	.05	.05	.06	.09	.11	.16	.18	.23	.30	.37	.45

Malleable Iron Conductor Hooks.

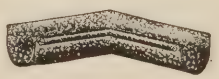
Size	2	3	4	5	6
Plain, for Brick, per 100	1.25	2.00	3.50	4.50	6.00
Galvanized, for Brick, per 100	1.75	2.75	4.25	6.00	8.00
Plain, for Wood, "	.75	1.50	2.50	3.50	4.50
Galvanized, for Wood, per 100	1.00	2.00	3.00	4.00	5.00

Square Conductor Hooks.

Size	2	3	4	5
Galvanized, per 100	2.50	3.00	3.50	4.00



OUTER CORNER MITRE.



INNER CORNER MITRE.

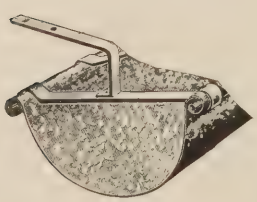
Lap Joint Mitres, Single Bead.

Size	3	4	5	6	7	8
Per dozen	2.25	2.75	3.00	3.50	4.25	5.00

Slip Joint Mitres, Single Bead.

Size	3	4	5	6	7	8
Per dozen	2.75	3.25	3.50	4.00	4.75	5.50

For Double Bead Mitres add 50 cents per dozen.



FOR DOUBLE BEAD.

Eave Trough Hangers.

3-inch, with rods complete, per dozen	4.00
4 " " " " " "	4.50
5 " " " " " "	5.00
6 " " " " extra strong, per doz.	6.00
7 " " " " per dozen	8.00
8 " " " " " "	9.00

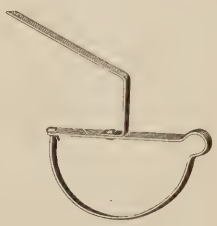


Fig. 0.—FOR SINGLE BEAD.

Bath Room Furnishings.



TOWEL RACK.
No. 3505.
Bar, ½ inch diameter. Width from wall, 2½ inches.

No. 3505.	15	inches	long	----	.60
"	18	"	"	----	.70
"	21	"	"	----	.80
"	24	"	"	----	.90
"	30	"	"	----	1.00

No. 3505½. Bar ⅜ inch.

Same style as No. 3505.

No. 3505½.	15	inches	long	--	.50
"	18	"	"	--	.60
"	21	"	"	--	.70
"	24	"	"	--	.80
"	30	"	"	--	.90



TOWEL RACK.
No. 3502.
Bar, ½ inch diameter. Width from wall, 3 inches.

No. 3502.	15	"	"	--	1.00
"	18	"	"	--	1.10
"	21	"	"	--	1.20
"	24	"	"	--	1.30
"	30	"	"	--	1.40

The above Racks are sent 21 inch unless otherwise ordered.



TOWEL RACK.
No. 3516.
Bar, ¾ inch diameter. Width from wall, 3 inches.

No. 3516.

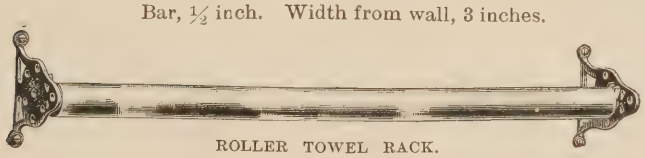
Heavy Pattern, 24 inches long. 2.20
" " 30 " " 2.50



TOWEL RACK.
No. 3503.
Bar, ½ inch. Width from wall, 3 inches.

No. 3503.

21 inches long ---------- 1.40

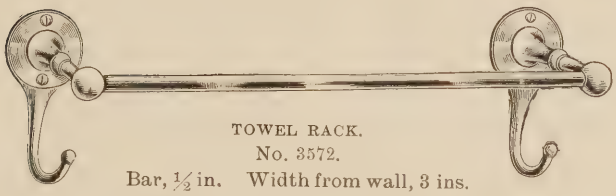


ROLLER TOWEL RACK.
No. 3514.
Bar, 1 inch. Width, 2¼ inches.

No. 3514.

Roller, 18 inches long ------- 1.80

For extra lengths No. 3514 add 6 cents per inch.



TOWEL RACK.
No. 3572.
Bar, ½ in. Width from wall, 3 ins.

No. 3572.

With Hooks, 21 inches long. 1.80



TOWEL RACK.
No. 3602.
Bar, ½ inch. Width, 3 inches.

No. 3602.

To lock with key, 21 inches long ---------- 2.20

Screws included with all Fixtures.

Bath Room Furnishings.



TOWEL RACK.
No. 3515.
Width from wall, 3 inches.

No. 3515.

¾ in. Glass Bar, 24 ins. long.	2.60
" " 30 " .	3.00

No. 3515½.

1 in. Glass Bar, 24 ins. long..	3.10
" " 30 " ..	3.60



TOWEL RACK.
No. 3524.
With 2¼ inch Glass Balls. Width from wall, 3¼ inches.

No. 3524.

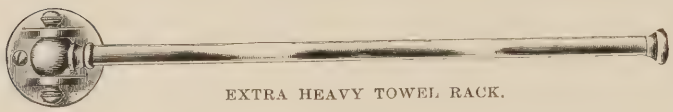
1 in. Glass Bar, 24 ins. long..	4.80
" " 30 " ..	5.30
" " 36 " ..	5.80

The annealed clear glass used in the above styles is very strong, and elegant in contrast with the nickel sockets.



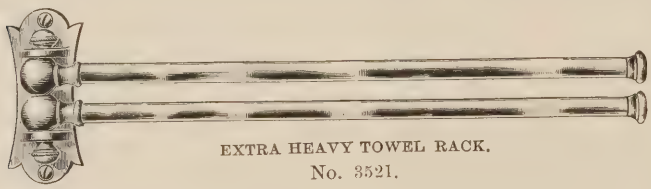
TOWEL RACK.
No. 3501.
Diameter of Bars, $\frac{5}{16}$ inch. Length of Bars, 14 inches.

No. 3501..... 1.60



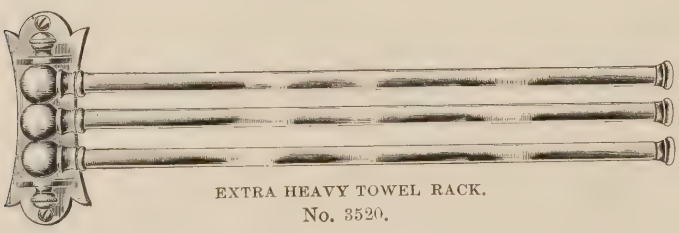
EXTRA HEAVY TOWEL RACK.
No. 3522.
Bar ½ inch diameter, 15 inches long. Wall Plate, 2½ inches diameter.

No. 3522..... 1.40



EXTRA HEAVY TOWEL RACK.
No. 3521.
Bars, ½ inch diameter, 15 inches long. Wall Plate, 4½ x 2 inches.

No. 3521..... 2.20



EXTRA HEAVY TOWEL RACK.
No. 3520.
Bars, ½ inch diameter, 15 inches long. Wall Plate, 5½ x 2 inches.

No. 3520..... 3.00

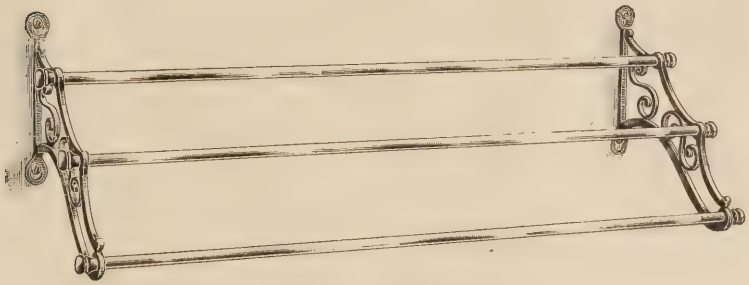
Screws included with all Fixtures.

Bath Room Furnishings.



No. 3517. Length, 24 ins--- 2.20
" " 30 " --- 2.60

TOWEL RACK.
No. 3517.
Heavy Pattern, ½ inch Bars.



No. 3510. Length, 20 ins.
Width, 6 ins---------- 2.70

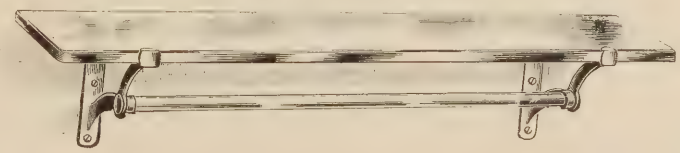
TOWEL RACK.
No. 3510.
For extra lengths No. 3510, add 9 cents per inch.



TOWEL SHELF WITH RACK.
No. 3513.
No. 3513. Length, 20 inches, Width, 6 inches---------- 4.00
For extra lengths of the above style add 16 cents per inch.



TOWEL BASKET.
No. 3576.
For Soiled Towels.
20 inches high, 12 inches diameter ---------- 9.00

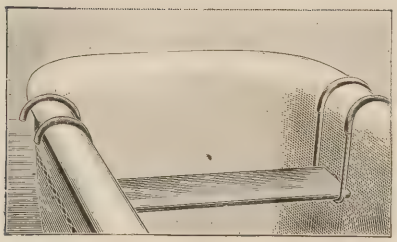


GLASS TOWEL SHELF AND RACK.
No. 3612.
Plate Glass, 5 inches wide, ½ inch thick.

No. 3612.	27	inches long,	Glass	Towel Bar	10.00
" 3612.	33	"	"	"	11.00
" 3610.	27	"	Nickel	"	9.50
" 3610.	33	"	"	"	10.50
" 3611.	27	"	without	"	9.00
" 3611.	33	"	"	"	10.00

(The illustration shows the Towel Bar or Rack used in Nos. 3612 and 3610.)
Screws included with all Fixtures.

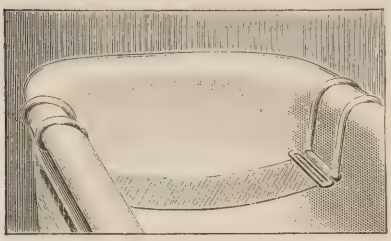
Bath Room Furnishings.



BATH SEAT, OAK OR IVORY FINISH.
No. 3580.

Oak, 18½ by 5½ inches, rounded corners. Rods are hinged under the seat, so that they are adjustable to bath tubs of the different widths.

No. 3580. Bath Seat, Oak Finish.... 1.80 Ivory Finish.... 6.00

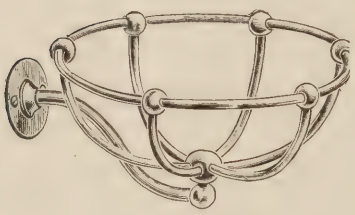


BATH SEAT AND HEAD REST.
No. 3670.

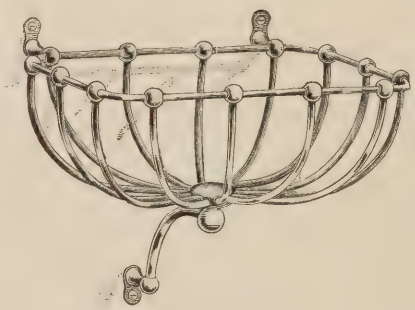
Adjustable to fit any bath tub.

The seat is of webbing and the ends of the rods are rubber-covered.

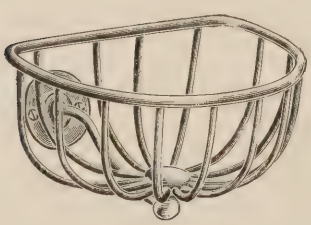
No. 3670..... 1.80



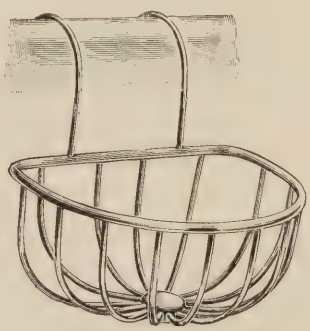
SPONGE HOLDER.
No. 3549.
Diameter, 7½ in. Depth, 3¼ in.. 1.90



SPONGE HOLDER.
No. 3543.
Length, 10 in. Width, 7 in. Depth, 3½ in.. 2.80



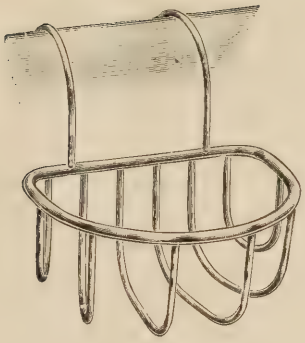
SPONGE HOLDER.
No. 3548½.
Rounded Front. Length, 8 in. Width, 6 in. Depth, 3½ in.... 2.25



SPONGE HOLDER.
No. 3548.
Rounded Front. Length, 8 in. Width, 6 in. Depth, 3½ in.... 2.20

Screws included with all Fixtures.

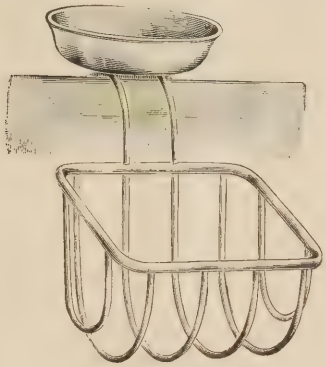
Bath Room Furnishings.



SPONGE HOLDER.

No. 3591.

Rounded Front. Length, 6½ in. Width, 5 in. Depth, 3½ in. 1.60

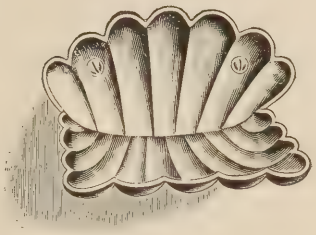


SPONGE HOLDER.

No. 3699.

Soap Cup, 5 x 3½ in.

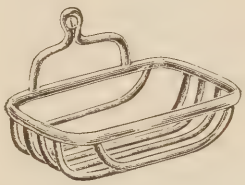
Sponge Basket is 6½ in. long, 5 in. wide, 4 in. deep.... 2.20



SOAP CUP.

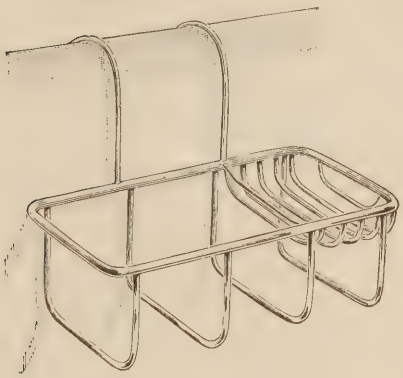
No. 3536.

Shell Pattern. 4 x 3 in.. 1.00



SOAP CUP.

No. 3553½. 6 x 3½ inches. 1.00

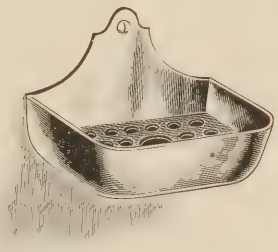


SPONGE HOLDER.

No. 3545.

For Sponge and Soap.

Length, 10½ in. Width, 5½ in. Depth, 3½ in.... 1.90



SOAP CUP.

No. 3529.

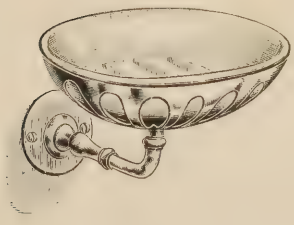
Square Pattern (movable drainer).

4½ x 3½ in.... 1.90



SOAP CUP.

No. 3575. 6 x 3 inches.... 1.70

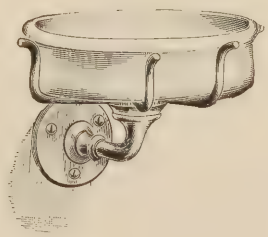


SOAP CUP.

No. 3608. 5¼ x 3¾ inches.

With China Tray..... 2.00

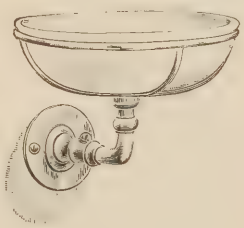
Without Tray..... 1.50



SOAP CUP.

No. 3620. 4¾ x 3 inches.

With China Tray..... 2.10



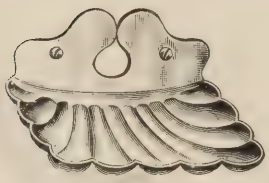
SOAP CUP.

No. 3623. 5¼ x 3¾ inches.

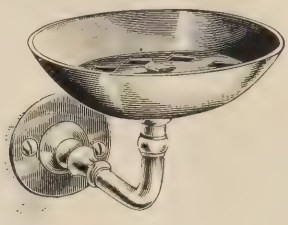
With China Tray.... 1.40

Screws included with all Fixtures.

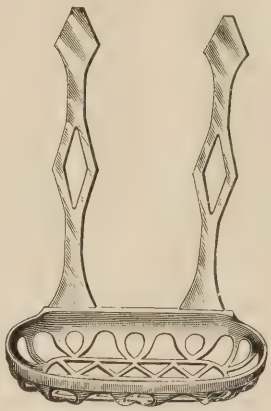
Bath Room Furnishings.



SOAP CUP.
No. 3582. 4 x 3 inches.
Shell Pattern..... .45

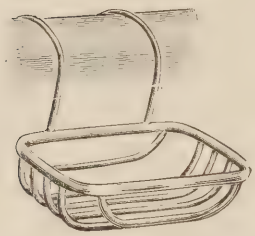


SOAP CUP.
No. 3539. 4 x 3¼ inches.
Oval Pattern (movable drainer)..... 1.50

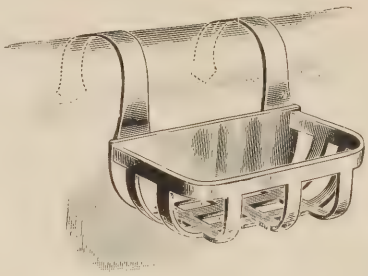


SOAP CUP.
No. 3554. 6 x 3 inches.... 1.70

NOTE — This cut shows the Hangers before bending, and as Nos. 3554 and 3527 are shipped, the metal being readily bent to fit rim of any bath tub.



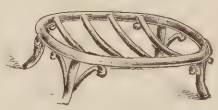
SOAP CUP.
No. 3553. 6 x 3½ inches.. 1.00
Sent with Bent Hangers as shown in cut.



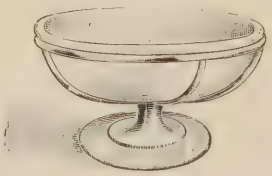
SOAP CUP.
No. 3527. 5 x 3½ inches.. 1.90
Sent with Straight Hangers. See note opposite.



SOAP CUP.
No. 3674.
5½ x 3 inches..... 1.20



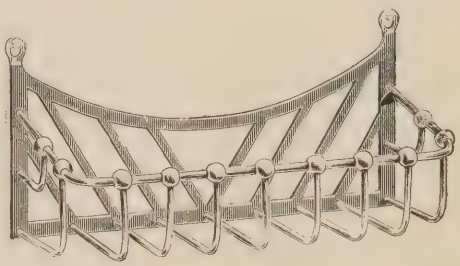
SOAP CUP.
No 3568.
3¼ x 2½ inches..... .60



SOAP CUP.
No. 3694.
5¼ x 3¾ in., with China Tray.. 1.40



BRUSH AND COMB HOLDER.
No. 3565.
Length, 10½ ins., Width, 4 ins., Depth, 1 in.. 2.00



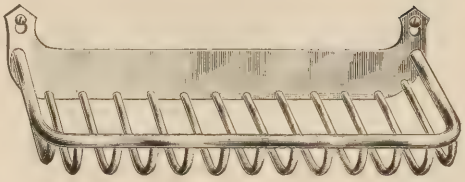
BRUSH AND COMB HOLDER.
No. 3541.
Length, 11 ins., Width, 5 ins., Depth, 2½ ins.. 2.80

Screws included in all Fixtures.

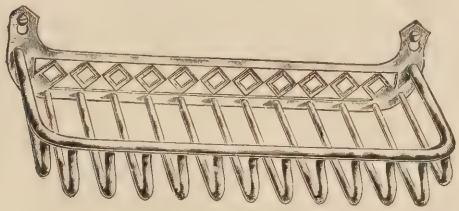
Bath Room Furnishings.



BRUSH AND COMB HOLDER.
No. 3578.
Length, 10 ins. Width, 4½ ins. Depth, 1 in.. 2.40



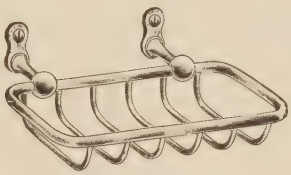
BRUSH AND COMB HOLDER.
No. 3595.
Length, 9¼ ins. Width, 3¾ ins. Depth, 1 in.. 1.90



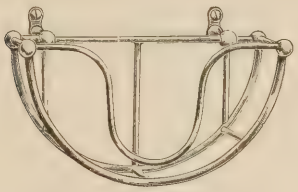
BRUSH AND COMB HOLDER.
No. 3585.
Length, 9¼ ins. Width, 3¾ ins.
Depth, 1 in..... 1.90



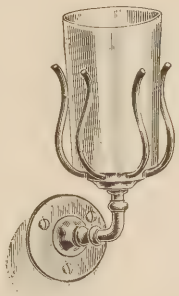
NAIL BRUSH HOLDER.
No. 3673.
5¾ x 2½ inches.... 1.00



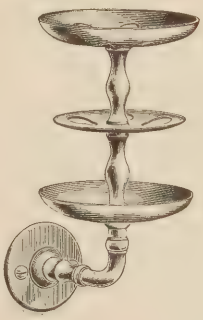
NAIL BRUSH HOLDER.
No. 3607.
5¾ x 2½ inches.... 1.10



BATH BRUSH HOLDER.
No. 3589.
8 x 4 inches..... 1.90



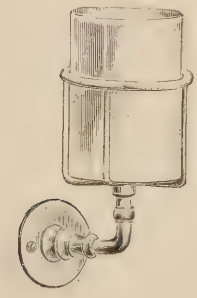
TOOTH BRUSH HOLDER.
No. 3630.
With China Vase..... 2.10
Without Vase..... 1.60



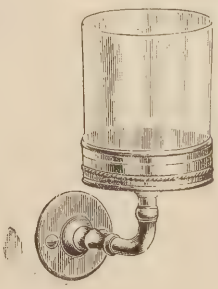
TOOTH BRUSH HOLDER.
No. 3544.
6 in. high, 3¼ in. diameter.. 1.10



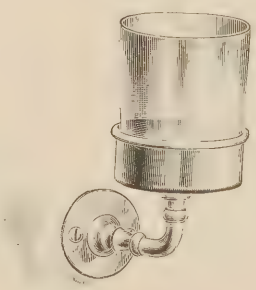
TOOTH BRUSH HOLDER.
No. 3569. 6¾ x 2½ inches.... .80



TOOTH BRUSH HOLDER.
No. 3622.
With China Vase..... 1.40
Without Vase..... .90



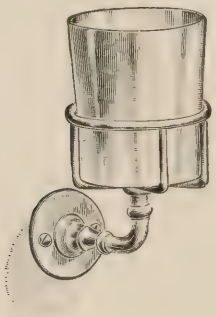
TUMBLER HOLDER.
No. 3551.
Diameter, 2¾ in. Depth, ⅞ in.
Holder only.... 1.20



TUMBLER HOLDER.
No. 3680.
Diameter, 2¾ in. Depth, 1⅛ in.
Holder only.... .80

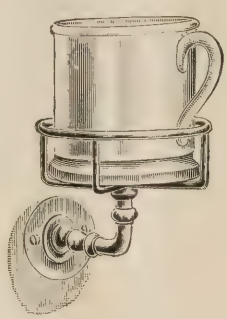
Screws included with all Fixtures.

Bath Room Furnishings.



TUMBLER HOLDER.

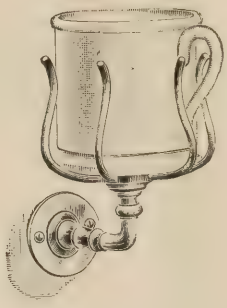
No. 3594. Nickel Holder only 1.60



TUMBLER HOLDER.

No. 3621.

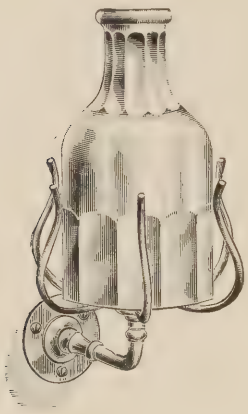
With China Mug 1.40
Without " ..... .90



TUMBLER HOLDER.

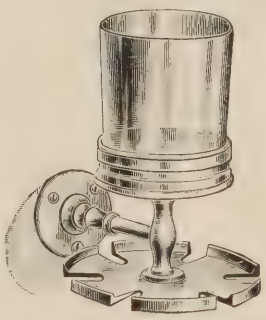
No. 3625.

With China Mug 2.10
Without " 1.60



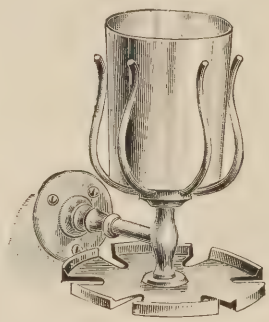
CARAFE HOLDER.

No. 3593. Holder only 1.70



TUMBLER AND TOOTH BRUSH HOLDER.

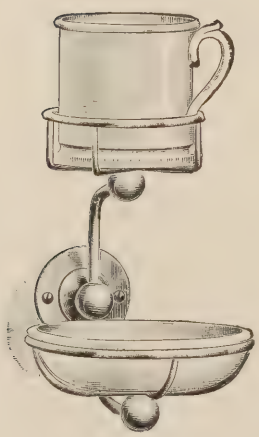
No. 3628 ..... 2.40



TUMBLER AND TOOTH BRUSH HOLDER.

No. 3631 ..... 2.40

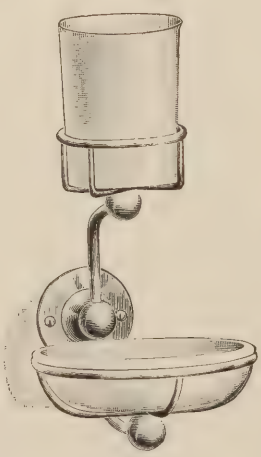
Above prices do not include Tumblers.



COMBINATION HOLDER.

No. 3690.

With China Mug and Soap Tray 2.60



COMBINATION HOLDER.

No. 3691.

With China Vase and Soap Tray 2.60



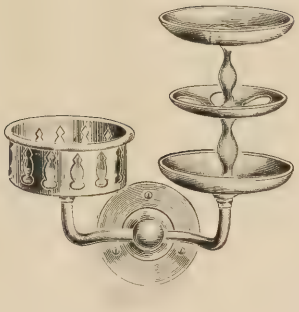
COMBINATION HOLDER.

No. 3632.

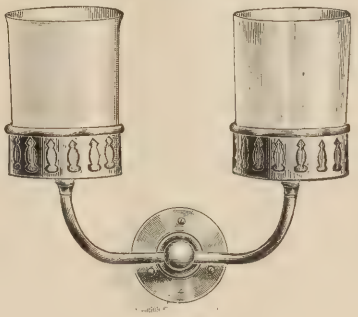
With China Vase, Mug and Soap Tray, and Plain Tumbler 6.50
For Nickel Holder only 4.90

Screws included with all Fixtures.

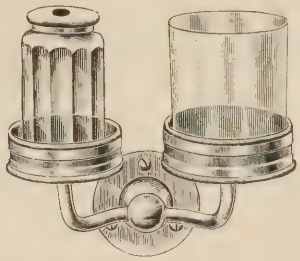
Bath Room Furnishings.



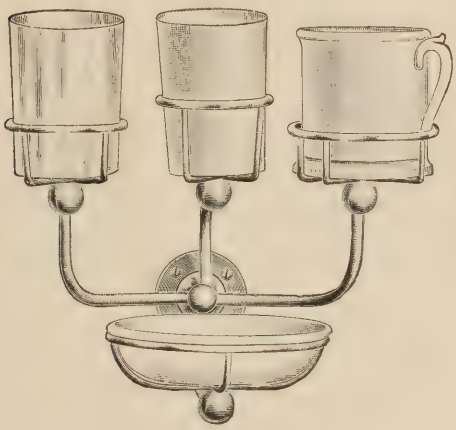
TUMBLER AND TOOTH BRUSH HOLDER.
No. 3682 ..... 1.50



TUMBLER HOLDER.
No. 3687. With China Vase and Plain Tumbler.... 2.10



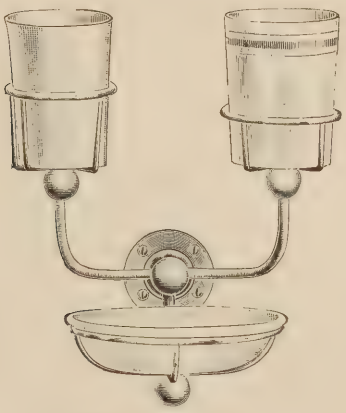
COMBINATION HOLDER.
For Tumbler and Tooth Powder Bottle.
No. 3627. Nickel Holder only, 2.00



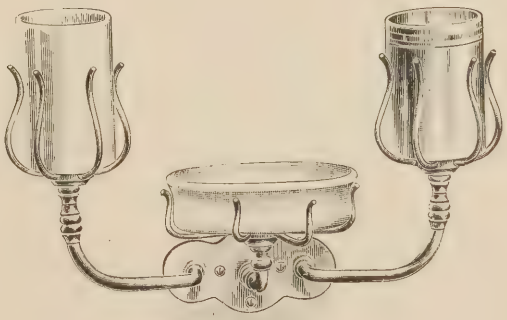
COMBINATION HOLDER.
No. 3693.
With China Vase, Mug and Soap Tray and Plain Tumbler..... 4.80
For Nickel Holder only 3.20



SHAVING SET.
No. 3675.
For Mug and Bay Rum Bottle. The Double Tray is for Shaving Paper, Razors, etc.
With China Mug 5.80



COMBINATION HOLDER.
No. 3692 ..... 3.60



COMBINATION HOLDER.
No. 3606 ..... 5.00

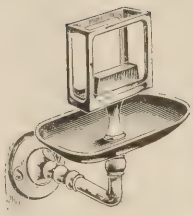
Nos. 3692 and 3606, as shown, are furnished with China Vase and Soap Tray, and Plain Glass Tumbler. For Nickel Holders only the list price is 1.10 less for either style.

Screws included with all Fixtures.

Bath Room Furnishings.



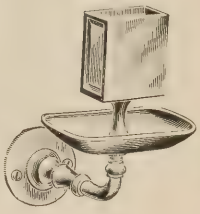
MATCH HOLDER.
No. 3559---- 1.25



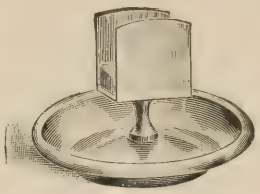
MATCH HOLDER.
No. 3530---- 1.25



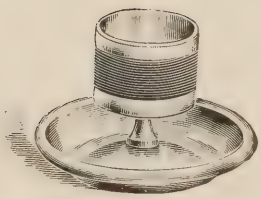
MATCH HOLDER.
No. 3528 --- 1.25



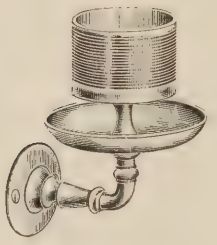
MATCH HOLDER.
No. 3586 --- 1.25



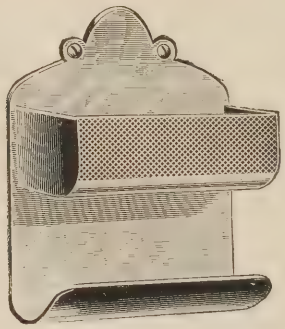
MATCH HOLDER.
No. 3598---- .50



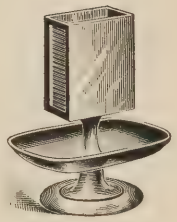
MATCH HOLDER.
No. 3599---------- .60



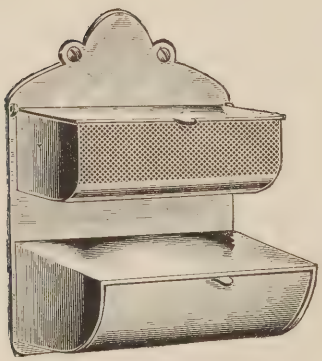
MATCH HOLDER.
No. 3561--------- .80



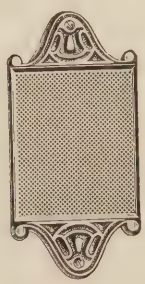
MATCH AND CIGAR HOLDER.
No. 3555---------- 1.00



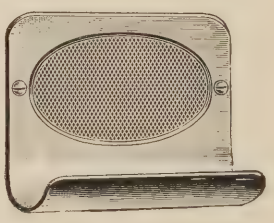
MATCH HOLDER.
No. 3558--- 1.25



MATCH HOLDER.
No. 3563---------- 2.20
The upper Box is for Matches. The Burnt Sticks are placed in the lower Covered Tray, which lifts out for emptying.



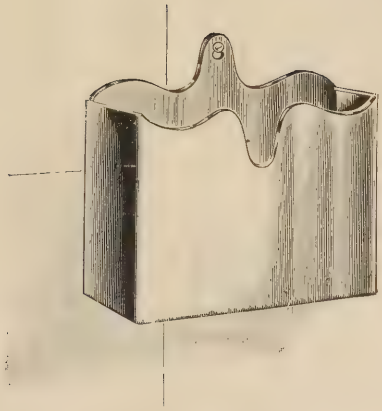
MATCH STRIKER.
Regular Finished Polished Brass.
No. 3560---------- .20



CIGAR REST.
Regular Finish, Nickel or Brass.
No. 3546---------- .50

Screws included with all Fixtures.

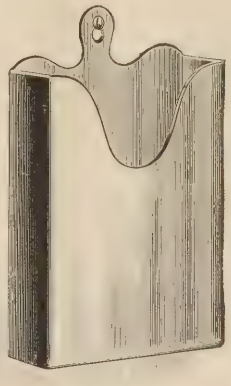
Bath Room Furnishings.



TOILET PAPER HOLDER.

No. 3537 ..... 1.70

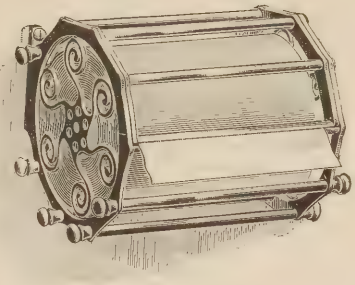
Will take sheets 5 x 7 inches.



TOILET PAPER HOLDER.

No. 3579 ..... 1.70

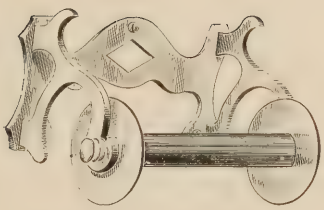
Will take sheets 5½ x 7½ inches.



TOILET PAPER HOLDER.

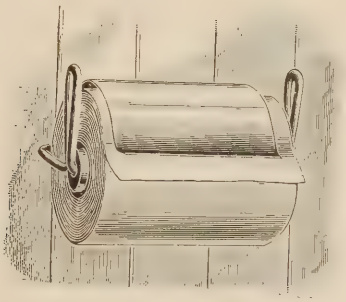
No. 3538 ..... 3.20

Will take roll 5 inches wide by 4 inches in diameter.



TOILET PAPER HOLDER.

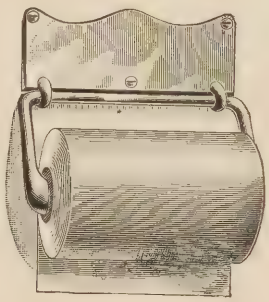
No. 3603 ..... 1.10



TOILET PAPER HOLDER.

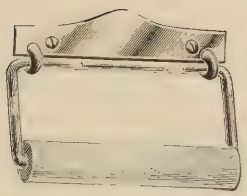
No. 3556 ..... .45

The Sheet Metal Spring presses on the Roll and regulates the run of the Paper.



TOILET PAPER HOLDER.

No. 3542 ..... .80



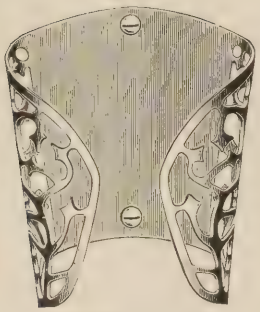
TOILET PAPER HOLDER.

No. 3574 ..... .30

The above Holders will take Roll 5 inches wide by 4 inches diameter.

Screws included with all Fixtures.

Bath Room Furnishings.



BROOM HOLDER.
No. 3547 ..... .90



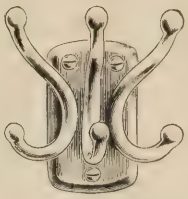
BROOM HOLDER.
No. 3588 ..... .40



ROBE HOOK.
No. 3534 .. .24



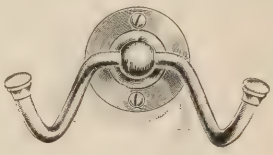
ROBE HOOK.
No. 3533 .. .43



ROBE HOOK.
No. 3532 ..... .70



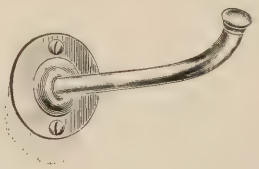
ROBE HOOK.
No. 3636 ..... .18



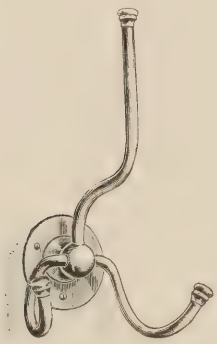
ROBE HOOK.
No. 3639 ..... .60



STROP HOOK.
No. 3637 ..... .30



ROBE HOOK.
No. 3644 ..... .35



COAT HOOK.
No. 3640.
8¼ inches high, Light ..... .75



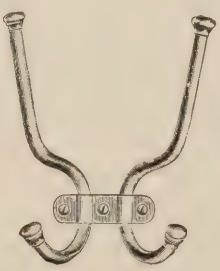
COAT HOOK.
No. 3638.
7¾ inches high, Light ..... .55



COAT HOOK.
No. 3641.
6 inches high, Light ..... .30



COAT HOOK.
No. 3552.
5½ inches high, Medium .... .48



COAT HOOK.
No. 3642.
6 inches high, Light ..... .55



COAT RACK.
No. 3649.
6½ inches high, Light ..... .45

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